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BUREAU OF PLANT INDUSTRY

WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

Not for publication without prior consent of this division.

REPORT FOR THE WEEK ENDING MAY 1, 1937.

HAVRE:

Precipitation of 0.04 inch during the past week brought the total for April to 0.22 inch, or approximately one-fifth normal. Rainfall since January has amounted to 1.07 inches, slightly less than 50 percent of the average. Wind velocity in April averaged 10.0 miles per hour, setting a new station record. The mean temperature for the month was 2.2° above normal, however, no extremely high readings occurred. Conditions at the present writing appear most unfavorable, rain being needed for the germination of small grains and for the continued growth of grass.

Spring wheat, oats, barley, spring rye, and sweetclover were sown in the crop rotation field during the past week. Cereal nurseries, variety projects, miscellaneous tillage experiments, and various dates of seeding also have been planted.

Forty-two acres of oats for hay were sown on fallow by the farm department, and a registered Ladak seed field in 36-inch rows received its first cultivation for control of weeds. Leveling of newly plowed bottom land, preparatory to seeding spring rye was completed.

Station visitors included R. L. Shotwell and field party from the U. S. Entomological Laboratory at Bozeman, investigating the grasshopper situation; and Torleif Aasheim, representative of the Division of Forage Crops and Diseases, from Bozeman, making arrangements for a grass nursery. Several local groups recently visited the station to inspect crested wheatgrass plantings which now present a remarkable contrast with the dormant appearance of the country in general.

Maximum temperature, 80°; minimum, 38°; precipitation, 0.04 inch.

JUDITH BASIN:

The mean temperature for the past week was 8° above the normal for April, and the wind velocity was 1.2 miles per hour above the April average. Only 0.02 inch of precipitation was recorded for the past week, bringing the total amount for the month of April to 0.42 inch, which is 0.77 inch below the April average. With only a limited amount of reserve moisture, all crops will be retarded should the dry period continue.

Small grains and grass seedings on Dry Land rotations have been completed, with the exception of flax. The better methods have shown fair germination, but nothing has emerged. Some winter wheat plots on the rotations will need to be reseeded, but others show a good stand. Grasses in general have made a good start, but only a moderate growth, due to need of moisture.

Maximum temperature, 70°; minimum, 31°; precipitation, 0.02 inch.

HUNTLEY:

Cool and cloudy weather throughout most of the week has brought beneficial precipitation in the form of snow and rain to neighboring localities, but only light sprinkles have been received at the station. Winter wheat has developed slowly and needs both moisture and warm weather to bring it up to average condition for this date. On fallow the plants are stooling heavily, but on stubble land much of it appears to be little beyond the seedling growth. Winter rye is weak and late.

Spring grains are coming up well on all tillage methods. Stands of spring wheat are very good; but oats, barley, and flax are still

emerging. Grasses, alfalfa and sweetclover have not yet appeared. Plowing and other tillage in the preparation of land for corn continued throughout the week. Most of the seedbeds obtained to date have been very good, but a few plots of heavy soil are cloddy. Cutworms appear to be rather numerous in many of the plots being plowed.

Maximum temperature, 77°; minimum, 26°; precipitation, Trace.

SHERIDAN:

The week was cloudy and windy with one light shower, and temperatures were just about average for the season. Wind was particularly heavy for this section on the 27th, with considerable soil in the air. No soil blowing took place on the station except on one sandy point, sown to crested wheatgrass last fall and with a good stand up. This was blown out entirely.

Growth of vegetation continues slow. The stand on a few winter wheat plots appears to be deteriorating rather than improving. One plot, in the duplicate of Rot. 258 started this year, was duckfooted and reseeded to spring wheat. Early bulk seedings of spring grain, the rates, the first date of seeding spring grain, and the varieties of spring grain emerged during the week.

Spring plowing for small grain in the rotations was completed and the plots were sown. Considerably less work was required to make a seed bed than usually has been required. Fall plowing, fallow, and stubbled land for later crops were duckfooted, and plowing for corn is now in progress. Some alfalfa land in bulk fields that had killed out was plowed to use for annual forage.

The month as a whole was about 2° warmer than the average. Total precipitation was 1.21 inches, 0.95 inch below the average, and only just enough to keep the surface soil in fair condition. Wind movement just equalled the second highest recorded here. Evaporation from the tank also was above the average.

Maximum temperature, 71°; minimum,26°; precipitation, 0.34 inch.

DICKINSON:

Cloudy, threatening weather the last four days of the month brought very little precipitation. Strong winds on several days dried out the soil rapidly and caused some soil blowing, particularly on the 27th. The soil has dried out so that seeding on many farms has been postponed until rain comes.

Vegetation has advanced slowly because of cool weather and dry soil.

April precipitation amounted to 0.84 inch, or only about two-thirds of normal. Precipitation for the four months in 1937 totals 2.25 inches. This is 0.60 inch below normal and about 0.50 inch more than was received for these months in 1936. Heavier showers fell in some nearby localities to the east, but most of this part of the State has received less than normal precipitation.

Increase fields of Gopher oats and Steigum barley were seeded. Early garden stuff was planted. Evergreens were transplanted to fill in where occasional plants had died. All trees seem to have come through the winter with less injury than a year earlier.

On April 21 wheat and barley were seeded with a Dempster furrow drill at three rates of seeding. A man doing custom seeding in the locality was hired to do this as the station has no drill of this type.

Maximum temperature, 56°; minimum, 22°; precipitation 0.12 inch.

MANDAN:

Agronomy: The past week was cool and cloudy with high winds during the early part. A new high record for wind velocity for a 24-hour period was set on the 24th when the wind averaged 27.5 miles per hour. This was nearly 4 miles per hour higher than the previous record set in 1914. The wind averaged nearly 35 miles per hour during most of the daytime. High wind continued through the 25th. A good deal of soil blowing took place over the country. There was some damage on the station.

All plats that are yet to be put into corn or fallow, were worked with a duckfoot to avoid blowing as much as possible. Barley was seeded during the week. Part of field P has been prepared for seeding oats. Wheat seeded on the 19th is not up.

Some rain fell during the latter part of the week. This was enough to wet the top soil. The most rain in 24 hours was 0.37 inch. Maximum temperature, 60°; minimum, 31°; precipitation, 0.48 inch.

Horticulture: Inside work in the greenhouse, such as potting and transplanting of vegetable and ornamentals, has been in progress during the week and is nearly completed. Outside garden work has been almost at a standstill due to high winds and extreme dryness of the soil. The showers received during the last days of the week have been a great help, however, and it is hoped to complete most of the early planting new week.

Clear-up of the grounds has been in progress, but considerable work remains to be done, such as replanting of trees and shrubbery, cultivation of groups and flower beds, &c. The lawns are now becoming green, but trees and shrubbery so far are somewhat backward. There seems to be considerable killing of wood in hedges and shrubbery, especially those under field culture where no extra water was applied.

Mulch has been hauled from the orchards, and raspberries, grapes, and budded stock have been uncovered. Planting in the orchards and breeding blocks has been completed. It was necessary to make many replacements this year. A number of trees have been potted for fruit breeding work. Pruning has been started in the field. It will again be necessary to remove a great deal of dead wood. Seed planted this spring is now coming up, and good stands appear to be the rule.

Arboriculture: The lining out of conifer seedlings has continued during the week and is now nearing completion. Seed is germinating and emerging very slowly owing to the cold weather. Soil moisture conditions are now favorable for emergence. Old trees are looking very weak. Ponderosa pine has lost all its needles except those of last year. Several trees are dying in the blue spruce block, which is the first mortality suffered of any consequence. Terminal growth has been severely injured on lodgepole pine. It is too early to determine damage to deciduous species. Native American elm has set a heavy crop of seed.

BELLE FOURCHE:

The week was unusually cold; and cloudy, unsettled weather prevailed the last four days. Light showers occurred frequently, but the precipitation was not heavy enough to be of much benefit to crops, the moisture penetrating the dry top soil to a depth of only 1.5 inches. A strong southeast wind on April 27 caused considerable soil blowing in this locality, and blowing was much more severe several miles farther west.

A total of 0.71 inch precipitation was received in April, which is 0.78 inch less than the average for the month. The total precipitation recorded during the year to date is 3.01 inches, as compared with the 4-months average of 3.15 inches. Moisture has penetrated the ground to a depth of 12 to 14 inches, but the top 3 inches of soil had become quite dry

prior to the recent showers, and additional rains are needed to assure good germination of the various crops.

Plant growth was retarded by the cold weather, but grasses and winter rye made noticeable progress. Winter wheat and sweetclover remained practically at a standstill, and the condition of winter wheat on a few plots is uncertain. Spring grain seeded the previous week is well germinated, except on spring plowing where much of the seed lies in dry soil.

Field work included seeding of grass on new rotation plots, and cultivation to retard soil blowing.

Mr. E. S. Lyons, Division of Soil Fertility Investigations, Scottsbluff, Nebr., visited the station a couple of days in connection with sugar beet fertilizer experiments.

Maximum temperature, 58°; minimum, 22°; precipitation, 0.26 inch.

ARCHER:

The weather during the week ending May 1 was cold and squally with a light wet snow during the night of April 27. The soil is quite moist, however, it permits tillage. Wheat seeded April 14 has not yet emerged. The grasses have made some growth, but this has been retarded by the cool weather which was also a factor in delaying field work.

Today the plot lines are being staked preparatory to seeding. The seeding of small grains in this section is the main field activity. Those farmers who fallow extensively are starting fallow operations. The Peacock damming lister is receiving considerable attention.

Director W. L. Quayle, Extension Agronomist John J. McElroy, and Co. Agt. Charles Llewellyn visited the station April 29. Two John Deere field representatives also visited the station April 29.

Maximum temperature, 60°; minimum, 24°; precipitation 0.36 inch.

NORTH PLATTE:

Light rains continued during the week bringing the total precipitation for the month up to 0.69 inch less than normal. Most of the moisture for the month fell in the last ten days. Previous to the rains, high winds caused severe soil blowing over this area. The wind velocity for April averaged 9.4 miles per hour or 0.5 above normal. The accumulated rainfall since January 1 was 3.49 inches or 0.41 inch less than normal. Freezing temperatures have accompanied the high winds and drought, preventing normal growth of the spring small grains. Freezing temperatures were recorded on 13 days of the month.

Grass was reseeded in some of the D.L.A. sod rotations. The alfalfa seeded last year in the plots is making some recovery, enough so that reseeding may not be necessary. Pastures are slow in starting this spring, and the drought apparently has thinned out much of the grass.

The annual spring feeders' day was attended by a record crowd on May 1.

Maximum temperature, 55°; minimum, 30°; precipitation, 0.34 inch.

AKRON:

April has passed with a total of only 0.33 inch of precipitation, made up of five separate measurable amounts. This was one of 8 years out of the past 30 when the April precipitation was less than 1 inch, and 1 of five when it was less than 0.5 inch.

Tuesday was the most dusty day this section has experienced yet this spring. There was a southeast wind which increased in velocity up to about noon, then held until nightfall. Weather observer in Akron, 4 miles west, reported wind velocities ranging from 35 to 45 miles per hour. Visibility

during the afternoon was between a quarter and a half mile. The appearance was that of dust rolling in. Reports since indicate that only those soils that had blown, or those that have become blow-susceptible, lost any appreciable soil from this wind.

The week was favorable for field work, and good progress was made with current cultural needs. Corn, sorghum, and bean plots were made ready for seeding. Duckfoot cultivator was busy all week on land to be fallowed, or on fallow or small grain stubble land to be seeded to the late spring seeded crops.

Thanks to soil moisture stored from the late September rains last fall, this region has not yet suffered greatly from the lack of usual April rainfall. Winter wheat has not yet suffered on any cultural preparation, and spring grains have made nice growth progress since their emergence. Mocking bird made his appearance about the middle of the week. Migratory birds of other sorts have also increased appreciably by the week end. Foundation shrubbery is slowly breaking into leaf.

Maximum temperature, 65°; minimum, 22°; precipitation, 0.10 inch.

COLBY:

The weather has been very unsettled this week with showers alternating with dust storms. It has been rather cold, too, with below freezing temperatures on two nights.

Winter wheat on the station is making fair growth, but is thin and, on some plots, very weedy. The spring grains are growing nicely. The tips of the young plants have turned yellow on some of the plots, probably due to the below freezing temperatures and whipping of the wind and dust. The winter rye looks much more promising than the winter wheat.

Preliminary tillage on the methods of fallow plots was started this week. Although the plots have not been worked since barley was drilled on them with a furrow drill a year ago, after it was apparent that the wheat was gone, the only vegetative material on these plots consists of an occasional dried up thistle of last year's growth and numerous green thistles about 2 inches high in the drill rows. There was an ample supply of moisture to the depth of working. Where the fall listed plots are supposed to be leveled when weeds start in the spring, this was done with a duckfoot. This machine did a good job of leveling the ridges and left the surface in excellent condition to take in moisture and to resist blowing. The moisture which fell this week soaked down about 3 inches.

Maximum temperature, 64°; minimum, 24°; precipitation, 0.56 inch.

Precipitation for April, 1.01 inches. Precipitation, January 1 to April 30, 2.98 inches.

HAYS:

Four days heavy and almost continuous wind, April 22-25, was very severe on winter wheat and rye. Rye, which has made little upright growth, is prostrate and badly burned. Winter wheat, except on fallow and that protected by stubble, looks very bad. It not only wilted severely, but the upper portion of the leaves are dried to the breaking point. The plants are not killed, but much of the top growth is dry and crisp. Wheat on fallowed land suffered somewhat from the lashing of the wind, but now looks very much better than wheat on cropped land. Wheat drilled in stubble or on ground prepared by a method that left considerable stubble standing seems to have benefited by the protection of the stubble and is not so badly whipped, although it has suffered more than that on fallow.

An interesting thing now showing up is the wheat sown on Blackhull kafir and on Wheatland milo ground where the row crop rows vary from 40 to

200 inches apart. The wheat growth is depressed on the 40-inch spaced sorghum ground, and on the wide-spaced sorghum ground the wheat appears to be depressed out from the row a distance of 60 to 80 inches, beyond which the wheat is the same as that on fallow on adjoining plots. This tapering-off of the wheat toward the sorghum rows is very noticeable. The spring small grains and peas have not suffered injury by wind and drought.

The weather during the larger part of this week has been more or less calm and mild with some promises of rain, which thus far have resulted in disappointment. A heavy killing frost the 27th apparently caused little if any damage.

Maximum temperature, 76°; minimum, 24°; precipitation, trace.

GARDEN CITY:

The total precipitation for April amounted to 0.16 inch, which is the third driest April on record, 1909 and 1935 being lower. The normal for April is 1.7 inches. Soil blowing occurred on 19 days of the month, but none of the storms were very severe. The wheat is still in fair condition except where soil from adjoining land has a clear sweep at it; some of that has been killed out. The temperatures this week have remained rather low, which is beneficial for the wheat since precipitation amounted to only 0.01 inch. May listing, plowing, and other field work will commence next week.

Maximum temperature, 72°; minimum, 30°; precipitation, 0.01 inch.

TUCUMCARI:

Temperatures have continued low, with the last half of April approximately as cold as the first half. Rain is needed, but ranges and trees appear to be in better condition than in several years. Some peaches and plums escaped the late March freezes; other fruits have not been injured.

Wheat on the plains toward Clovis is promising, although rain is needed. Cutworms and wireworms are attacking some fields, but immediate rain would offset this damage to a great extent.

Nearly all the fields have been blank listed where row crops will be planted, and there has been comparatively little blowing in April. Soil tilth is good, but moisture is deficient below the first or second foot.

Station work the past week consisted of watering newly planted trees and shrubs, repairing fences, poisoning rats and gophers, and preparing for contour listing of range land in cooperation with State College.

Maximum temperature, 82°; minimum, 36°; precipitation, None.

DALHART:

Another week of shifting sands -- although there were two calm days. Most of the sandy country now has the appearance of desert sands; there is sufficient loose sand on the surface to start movement with the low-straight winds. Apparently no additional accumulations were made on the station during the week; the fields still have a thin layer of sand which was accumulated during April. This seems to be a paradox as we were wont to think that loose sand on the surface would surely start abrading with the first wind. Another statement which has been given much credence, that when lister furrows become filled with sand the whole field will start moving, seems also to have become a superstition or a myth. Listed fields seem to hold even in the deeper sands where the movement was not under way before listing was started. Farmers are starting listing "cover crop" land. The sentiment among the better farmerson this southern rim of the Dust Bowl has about crystallized apparently upon the idea that Government intervention is imperative <u>now</u>. Successful men, without a taint of radicalism in their

makeup, are ready to demand and go along with any program that is sufficiently drastic to cope with the problem. To those entirely outside the area, some of the compulsory measures advocated would sound fantastic, but a sound appraisal of the problem can only lead one to agree that absolute compulsion of certain features must become a part of a permanent program.

From desert to flowers: Lilacs have been a riot of color this week; the first year for a number of years that lilacs have bloomed and apparently never so profusely as this year.

Tree planting was completed during the week.

Maximum temperature, 72°; minimum, 32°; precipitation, 0.04 inch.

April precipitation, 1.04 inches. The wind velocity for the month was above normal with more than half of the days furnishing soil blowing. The precipitation for the past ten months is 5.09 inches.

BIG SPRING:

Another dry week has passed, which has left the rainfall for April considerably below normal. A combined snow, hail, and rain the first of April netted 0.54 inch precipitation, which is the sum total for the month as compared with a normal of 1.99 inches.

Wheat in this section is rapidly deteriorating, and if rain is not received within a week, it is probable that the crop will be a failure in the county.

The May 1 date of cotton was planted as scheduled, and it is thought that there is sufficient moisture for emergence if the winds do not dry out the surface soil too rapidly. Other field work has remained at a standstill during the week, for it has not seemed advisable to level the sand furrows until a rain is received or at least until the winds slow up a bit.

Station work has consisted mainly of hauling dirt for Station roads and repairing the tractor.

Maximum temperature, 92°; minimum, 38°; precipitation, None.

WOODWARD:

While there has been no rain over the past week, wheat has suffered much less than it was feared it would. This is due to the very moderate wind velocities and temperatures decidedly lower than the week previous. The wheat that is suffering the most severely is that on the heavier and better land. This stooled very heavily last fall and made a rank leafy growth this spring. The thinner, less forward wheat on sandy land now has fresher and more promising appearance.

This is spirea week at the station and the bloom of Van Houtte is about perfect. Iris this year are blooming as they are supposed to, new ones coming in as others fade, over a period of 6 to 8 weeks. In the perennial test block a dozen or more plants are all blooming together. One of the showiest is an oriental poppy. Flax which volunteers each year all over the garden space about the buildings is a bright vivid blue each morning.

Maximum temperature, 81°; minimum, 35°; precipitation, None.

LAWTON:

Night temperatures during the past week were cool, varying from 43° to 55°, and the maximum temperatures ranged from 69° to 84°. In general, it was good growing weather for wheat but too cold for early planted sorghum and cotton seedlings. Most of the wheat varieties are heading, and leaf rust made a very noticeable development during the past week.

Kafir, feterita, and sorgo were planted on the rotation plots April 27 and 28. Planting on the chinchbug sorghum resistance project will begin May 3. Surface soil on cultivated land crusted very hard after the 2.35 inches of rain on the 20th, and subsequent weed growth has been vigorous.

The April rainfall of 2.72 inches was only 0.31 inch below the monthly normal. The deficiency from January 1 to April 30 was 1.70 inches. For the same period in 1936 it was 6.4 inches.

PENDLETON:

Precipitation during April was 3.61 inches, the average for April is 1.28 inches. All this precipitation was taken up by the soil, no run-off occurred. Fall sown wheat is beginning to grow quite fast with the advent of warmer weather. Spring wheat has good color and is beginning to develop a permanent root system. Some of the grasses in the native grass nursery are beginning to head, the first grass to head was one of the bluegrasses, heading on April 15.

Plowing for fallow on the rotation plots is completed, the increase fields remain to be plowed, Some work with the one-way disk has been done. Spring wheat on land prepared for fallow with the one-way disk and the ordinary double disk do not have as good color as the wheat on the plowed fallow. Early this spring the nitrate content of the disked fallow and the plowed fallow was the same; at the present writing the disked fallow plots indicate a lack of nitrogen.

Visitors: K. W. Gray, Field Assistant in Entomology, Oregon State College; and F. C. McWhorter, Pathologist, U.S.D.A., Corvallis.

Maximum temperature, 84°; minimum, 32°.

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REPORT FOR THE WEEK ENDING MAY 8, 1937.

HAVRE:

Clear skies and moderate temperatures prevailed, with 0.09 inch of precipitation Friday night. A light frost occurred on the 6th.

Small grains have emerged quite well on fallow, disked corn ground, and fall plowing, but germination has been rather uneven on spring plowing and disked stubble land, owing to a dry seed bed. Because of very poor stands, the winter wheat plots were cultivated and reseeded. An early planting of corn was made.

Cultivation of a general farm field of crested wheatgrass in rows was completed. The oat hay fields are emerging with reasonably uniform stands. Spring rye was planted in two bottom land tracts which were recently plowed and levelled. Alfalfa under irrigation is beginning to make fair growth. Twenty acres of benchland alfalfa were irrigated early in the week.

Station visitors included Director J. C. Taylor of the Montana Extension Service; A. H. Walker, R. T. Clark, and I. M. C. Anderson of the Animal Husbandry Department, Montana State College; and Carl Englehorn of the Soil Conservation Service, Great Falls.

Maximum temperature, 80°; minimum, 32°; precipitation, 0.09 inch.

JUDITH BASIN:

Only 0.01 inch of precipitation fell during the past week, and winter wheat and grasses are very much in need of moisture. Early seedings of small grains have emerged with good stands, but the cutworms have also made their appearance and are doing considerable damage on barley plots. Poisoned bait is being applied for the control of these pests. All small grain seedings have been completed, with the exception of some small areas for feed crops where sufficient moisture for germination is questionable. Some farmers have delayed their seeding on account of worms and moisture conditions.

Maximum temperature, 74°; minimum, 29°; precipitation, 0.01 inch.

HUNTLEY:

Temperatures throughout the week have been moderately high, and where moisture has been available crops have made a good growth. Winter wheat on summer fallow has improved greatly in appearance but still looks weak on other tillage methods with the exception of one or two plots of disked cornland. Spring grains continue to emerge, but on many spring-plowed plots the stands are incomplete and will probably remain so until a good rain is received. Plots where stands are thin are beginning to get weedy.

Seeded grasses and ranges have made sufficient growth to supply grazing to cattle, and all local stock that can be spared has been turned out as supplies of stored feed are exhausted. Crested wheatgrass broadcasted on pasture lands during the last two seasons shows very little "catch". That drilled in has a somewhat heavier stand but still very thin. Grasshoppers are beginning to hatch in scattered spots over the community.

Maximum temperature, 83°; minimum, 33°; precipitation, 0.15 inch.

SHERIDAN:

With warmer weather over the most of the week there was a decided gain in plant growth, including weeds, over the preceding month. Early seedings in the rotations emerged the first of the week, and the seeding of last week on spring plowing has begun to emerge. Some alfalfa has started in scattered places where sown broadcast on the fall seedings of crested wheatgrass. Sweetclover, alfalfa, and a scattered stand of crested wheatgrass and bromegrass emerged in the regular spring seedings. Plowing for corn and late crops was completed.

The first weights of sheep and hogs were made, and the sheep were placed on pasture. The one lot of pigs to go on rye was placed on that pasture, but alfalfa has not yet made enough growth to pasture.

Poisoning of crickets over the county, including some areas near the station, has been in progress for the last 2 weeks. Whether they can be controlled over the wide areas where they are reported to be hatched does not yet appear to be certain. Grasshoppers also have begun to hatch on the station.

Maximum temperature, 72°; minimum, 38°; precipitation, 0.48 inch.

DICKINSON:

Dry weather continued with temperatures above normal until Friday when a sharp drop occurred. Wind movement was moderate and no soil blowing occurred.

Wheat and barley seeded April 17 now have good stands on most plots. Oats seeded on April 19 are a little slower in emerging but evidently will have good stands. Corn ground and fallow have better stands than other tillage methods.

Unless cool wet weather follows soon many grain fields will be injured by Russian thistle which has come in thickly as a result of the warm, dry weather.

Potatoes were planted on rotations May 7, flax and millet on the 8th. Increase strips of Steigum barley, Gopher and Victory oats, and wheat have been seeded on the new quarter. These were seeded to get a stubble on the field to prevent blowing.

Maximum temperature, 80°; minimum, 31°; precipitation, 0.04 inch.

MANDAN:

Agronomy - Temperatures were higher during most of the week. Weather turned cool toward the end of the week. Small grains came up to good stands early in the week, after being in the ground nearly two weeks. Roadways were seeded down, and flax and alfalfa were seeded in the rotations. Several acres of oats were seeded in field P for feed. An early planting of corn was made on the 5th.

Maximum temperature, 80°; minimum, 35°; precipitation, trace.

Horticulture - The continuing warm weather has been beneficial to grass growth. The lawns about the station buildings are greening up rapidly, and mowing will be in order next week. Winterkilling of shrubs and trees is becoming more and more apparent. Physocarpus opulifolius, Philadelphus syringa, and Spirea Van Houttei in most locations appear to be dead to the ground. Chinese elm also appears to be badly hit.

Of the hedges in the field only the following came through the winter with little or no winter injury: Syringa persica, Lonicera tatarica, Caragana arborescens, Rhamnus cathartica, Crataegus pinnatifida, Ulmus pumila, Ulmus americana, and Fraxinus lanceolata.

Two of the most promising dwarf species, Ribes diacantha and Prunus tomentosa, have so much dead wood down to the roots they will have to be cut back to the ground.

Tulips planted last fall came through the winter in fine condition, and a bed of early varieties in assortment planted in front of the office building is at present commencing to bloom and is presenting a very fine appearance.

Arboriculture - The entire week has been spent in breaking crust so that seedlings might emerge. The soil has crusted badly from one half to one inch thick over the seedlings, and is as hard as cement. As a result of the breaking of the crust an excellent emergence has taken place for ash, American elm, honey locust, Russian-olive, caragana, hackberry, and chokecherry. Rain is badly needed, as most of the seedlings are in dry soil. Green ash, boxelder, and cedar trees are now in blossom. A heavy crop of seed has set on American elm. Buds are just starting to break on Chinese elm, which is nearly a month late for this species. Rabbits gained entrance one night to a large cedar bed and caused considerable damage to recently emerged seedlings.

BELLE FOURCHE:

Clear, warm weather prevailed the greater part of the week, but the first two days were cold, cloudy, and showery. The rains were too light to be of value, aside from making moisture conditions in the surface soil a little more favorable for the germination of seed. No precipitation of consequence has been received since April 24, and the continued lack of moisture has created a general feeling of apprehension in this section. Only a limited amount of moisture is stored in the soil, and it will be exhausted by a vigorous crop growth within a week or 10 days. The Belle Fourche reservoir is the lowest in the history of the irrigation project, for this season of the year, and the proposed water apportionment for irrigated land is only 25 percent of normal requirements.

The warm weather has been favorable to plant growth. Fall grains and grass have made marked improvement, and spring sown small grain is up with good stands on all cultural treatments except spring plowing. Flax, alfalfa, and sweetclover, seeded the latter part of April, are beginning to emerge, and excellent stands of grass have developed on fall seeded plots.

Field work has included plowing and preparing the various corn plots for planting, manuring fallow, and seeding alfalfa varieties and grasses.

A. C. Hildreth, Cheyenne Horticultural Field Station, visited the station May 7.

Maximum temperature, 79°; minimum, 31°; precipitation, 0.15 inch.

ARCHER:

The extended cold, squally weather let up on May 4. This permitted field operations to proceed, and the warm weather which followed stimulated plant growth. In the varietal plots, cereal crops emerged 20 days after seeding. Trees and shrubs show greater signs of life. Grasses made a rapid growth. Due to this the dairy cows were turned into the crested wheatgrass pasture on May 6.

The seeding of small cereals in the rotation plots is complete, and tillage for the millet crop is under way. The corn ground is ready for seeding. The experimental dry land garden was seeded during the week.

The eccentric one-way and the Peacock damming lister are receiving considerable attention from farmers and the Soil Conservation Service in this section.

Dick Lewallen and H. O. Carter of the Soil Conservation Service, Torrington, Wyo., visited the station May 7. County Agent C. S. Llewellyn also visited the station May 7.

Maximum temperature, 71°; minimum, 30°; precipitation, 0.19 inch.

NORTH PLATTE:

Good growing conditions characterized the weather for the week. No frosts were recorded, and the light rains that fell during the week were a benefit to the spring grain and pastures. Much of the oats and barley has been seeded for nearly 6 weeks, but to date they have made only a few inches of growth. Warm weather and additional rain is needed for the crops.

The roadways of the field plots were trimmed during the week, and winter rye was seeded in the roadways where the slope is enough to cause washing. Field peas and new seedings of sweetclover are making good growth. The winter rye in the rotation plots made a poor survival. The land is being prepared for corn planting, and seeding will begin within the next week or ten days.

Several high school pupils from surrounding towns have visited the station during the past few days. Superintendent Zook and H. E. Weakly attended the Nebraska Academy of Science at Lincoln on Friday and Saturday.

A. K. Hepperly, Agricultural Agent for the Burlington Railroad, visited the station Thursday.

Maximum temperature, 72°; minimum, 39°; precipitation, 0.61 inch.

AKRON:

The past week has been one of local showers with precipitation recorded at this station on six days. It is likely that certain sections received up to an inch of timely rainfall.

Fall and spring grains are holding well in this locality, though growth has been retarded over the past seven days, giving Russian thistles a good chance to become well established in the spring grains. Sod grasses have not greened appreciably with the exception of the western wheatgrass (smithii) patches, but this is not exceptional. During the 11-year period 1920 - 31, the average available date of pasture on the 10-acre native sod sheep pasture was June 5. Deciduous trees and shrubs are also slow about leafing out. Weather has been favorable, and the apple and plum trees in the orchard have been beautiful with their abundant bloom.

Current field work is well in hand. Corn was planted on the stubble series for cereal variety experiments another year. Early listing was indicated by the volunteer grain, and it seemed advisable to economize on field work by seeding the corn in the same operation. This is too early for the best grain production, but the station is already well stocked with feed grains.

J. M. Stephens and E. F. Chilcott visited Thursday and Friday. E. W. Nelson, in charge of range management studies for the State College also visited Thursday. Hurley Fellows has been here the entire week making pathological root studies on winter wheat.

Maximum temperature, 75°; minimum, 35°; precipitation, 0.26 inch.

COLBY:

This has been a favorable week for crop growth. It has showered nearly every day, and there have been no severe dust storms. The temperatures have been only moderately warm. Winter wheat on the plots is making rather encouraging growth now. Thistles which started early appear to be making less headway than the wheat. The spring small grains are growing nicely. All the alleys and the edges of the roadways were listed again in the old furrows made last fall, to kill the thistles which had started thick. Manure was spread on the milo and fallow plots in rotations 557 - 560 and 156.

E. F. Chilcott visited the station Wednesday.

Maximum temperature, 76°; minimum, 38°; precipitation, 0.38 inch.

HAYS:

The weather during the week has been generally mild, quiet, and partly cloudy, with light showers. The conditions have been favorable for good wheat development where soil moisture is still easily available and has provided temporary relief for wheat on cropped land where it has been struggling for life since the heavy winds April 22-25. On the cropped land where wheat had only a limited amount of moisture in the fall, conditions since then have been sufficiently favorable to maintain normal development until the latter part of April, and up to that time its appearance would justify estimated yields of 20 bushels. Since that time, it has deteriorated until now it would seem 10-bushel yields would be as much as could be expected under favorable conditions from this time to maturity.

Except as noted later, the wheat on cropped land looks much the same regardless of method of seed-bed preparation. It is about 4 to 6 inches high, and the top growth is badly dried out except for a little new growth during the past week. On cropped land at the present time wheat seeded on ground prepared with the duckfoot and the chisel appears to have suffered the least, probably because there is a larger amount of straw left in a roughened condition on the soil. This offered some protection during the heavy winds that whipped the wheat so severely. Its advantage may also have been due in part to the fact that not quite so heavy an early growth was developed.

Wheat drilled on sorghum row crop land where the distance between rows varied from 40 to 200 inches continues interesting. The growth of wheat in the sorghum stubble row is much thinner and is from 5 to 7 inches high. The growth becomes both thicker and taller as the distance increases from the sorghum stubble row to a maximum height of

10 to 12 inches 80 inches from the row, where the growth is as thick as it is on clean fallow.

Barley, oats, and spring wheat continue with a spreading growth, look very good, and have only begun to show signs of the severe weather. Canada field peas are making a rather slow growth, are about 4 inches high, and none to thrifty. There is a heavy stand of weeds in the peas which threaten considerable competition for moisture. Weeds are also thick in the small spring grains, but the crops have the lead over the weeds in development. There is a possibility the weeds will not harm these crops so much.

Winter rye was turned under at a height of only 5 or 6 inches. The growth was very badly wilted, in fact almost dried up. The ground turned very dry. The wheat stubble plowed under in July last year was thrown to the surface in a fair state of preservation and showed the least effects from weathering that has been observed for many years.

Maximum temperature, 81°; minimum, 38°; precipitation, 0.45 inch.

GARDEN CITY:

Every day this week was cloudy or partly cloudy, but only 0.03 inch of moisture was received, except for four traces. On three days this week there was dust in the air, but the amount was small. The severe dust storms appear to be over for this year, as considerable of the blow land is getting a cover of thistles and other weeds. The wheat on the station is showing considerable injury due to lack of moisture. Soil samples taken on the M. C. wheat A, B, C and D in nearly every case show a percentage of moisture below the wilting coeficient.

Field work consisted of rod weeding and spring-toothing those plots which call for spring cultivation, leveling listed plots, splitting ridges, and plowing those plots which call for May 1 plowing.

Maximum temperature, 84°; minimum, 36°; precipitation, 0.03 inch.

TUCUMCARI:

Little field work has been performed the past week, but trees have been watered and cultivation given old and new plantings. Warmer temperatures of the past week have rapidly reduced available moisture, and ranges and trees show the need of rain. Wheat on the plains is suffering intensely, and farmers estimate that prospects have been reduced from 25 to 40 percent in the past ten days.

The majority of plot and increase land was blank listed a month to six weeks ago and has had no further cultivation. All fields are in excellent condition to take moisture, and it is hoped that rain will occur before further work is necessary.

A range contouring demonstration in cooperation with the Extension Service is being held on the station today. About one hundred farmers and ranchers are in attendance.

Maximum temperature, 85°; minimum, 44°; precipitation, none; wind velocity, 6.0 miles per hour.

DALHART:

In general sand movement was not severe during the week. There was some soil movement early in the week, but drifting was at a minimum. As it is the time of the year when the seedbeds should be prepared, the south field (except for the CC plots) and the increase and variety plots in the west field were listed. The ground was reasonably moist, and a fair job of listing was accomplished. Actually the soil appeared to turn up in an excellent condition, but experience would make one wish for more moisture when the soil has been dry for so many years. The entire area listed had a uniform distribution of blown soil on the surface. This layer would probably average less than a quarter of inch, but the striking feature was the cover effect evident. Also, as mentioned previously, one could only marvel that this easily shifted sand did not cause any appreciable erosion.

Sand accumulations around trees and buildings were hauled away during the week. It is more proper to state that this hauling was continued during the week, as the work has been rather steadily going forward since in February and must continue for some time to come.

J. M. Stephens and E. F. Chilcott visited the station on the 7th.

Maximum temperature, 83°; minimum, 40°; precipitation, 0.07 inch.

BIG SPRING:

Another dry week has passed, although there were several occasions during this time when the clouds looked like it could not miss raining. Some of the favorable features of the week were low wind velocity and mild temperatures.

Winter annual weeds, which have furnished the greater part of the grazing on ranches this spring are dying now, and there is not enough soil moisture to start grass to any extent. If this condition is not changed soon, pastures are going to be very short.

All rotation plots were springtooth harrowed during the week, and the cooperative fields were duckfoot cultivated and harrowed. The latter are now ready for planting when rain is received. Other work has consisted of cultivating evergreens, treating seed with copper carbonate, and cleaning out tree rows.

Maximum temperature, 85°; minimum, 45°; precipitation, none.

LAWTON:

Nearly all of the wheat varieties are fully headed and several of them measure as much as 45 inches in height. Rotation plots of wheat are also headed, and vegetative growth is especially rank on fallow and on green manured land. Spring seedings of oats are heading, but plant growth has been slow and uneven. Winter oats are very promising at present.

Kafir, feterita, and sorgo planted on the rotations April 27 and 28 emerged to good stands by May 6 and 7. Cotton and cowpeas were planted on the rotations May 7 and 8. The chinch bug sorghum resistance project was planted May 3 to 5. Seedbeds for all plantings were in good condition, and a shower of 0.26 inch on the 7th provided good surface moisture for prompt emergence.

The overwintering infestation of chinch bugs is about normal, but the cool spring weather has greatly retarded egg laying and the hatching of first generation nymphs. Such nymphs are usually very numerous by this time of the year, but as yet are not present.

Farmers throughout the county are preparing machinery for the largest and best small grain harvest that has obtained for several years. Cotton planting was well under way the past week.

Maximum temperature, 86°; minimum, 46°; precipitation, 0.33 inch.

WOODWARD:

On a recent trip to Akron, Colo., it seemed there were still possibilities for fair to light yields of wheat on occasional fields from Liberal to Scott City. Most of such wheat is probably on fallow. Over a few square miles near Plains, Kans., however, wheat is uniformly remarkably good from very heavy rains early last fall. From Colby to Akron the wheat is not so far along but that rains soon can make yields fair to very good. From a point 30 miles south of Akron to Dalhart not one field of wheat still living was seen. From Amarillo to Spearman it does not seem as though wheat can possibly average over 3 to 4 bushels, and unless rains come very soon it cannot yield anything except on an occasional field and even then very little. It is rarely the appearance of the crop over so long a distance is uniformly bad. On some fields between Woodward and Perryton there are still possibilities of some good yields. These are for the most part on sandy land where the stand is light. On the station some plots where land was prepared early will make good yields with timely rains. It is a little hard to explain why perhaps half the plots on the station still have possibilities of making good yields and not one farmer's field in thirty has. On fallow land on the station wheat is just beginning to suffer badly. Some of these plots are still capable of 30-bushel yields.

From Amarillo to Woodward not one field of wheat had been plowed or listed up with the intention of putting in row crops or starting a fallow. It seems that this is exceedingly important in order to save May and June rainfall; but it is another thing not yet generally recognized.

On the station fifty varieties of Iris are in a final burst of glory. Perhaps 40 other perennials including penstimons, salvias, pinks, daylilies, verbenas, and many others seem especially vivid, probably because of the absence of high temperatures.

Work of the week has consisted largely in planting grass for the Forage Division and in catching up with the hoeing. A grass seeding drill is under construction.

PENDLETON:

The first few days of the week were quite hot, with a maximum temperature of 91°. No precipitation occurred during the week. All small grains are growing rapidly and most of the fields have a good color. Rains will not be necessary for another month. Late varieties of peas are being sown in the higher elevations now. Corn on the rotation plots was planted on May 7.

Maximum temperature, 91°; minimum, 27°; precipitation, none.

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OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 15 1937

Not for publication without
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REPORT FOR THE WEEK ENDING MAY 15, 1937.

HAVRE:

Strong westerly winds on five days caused considerable soil movement and damage to crops in many parts of north-central Montana. Lack of precipitation and drying winds have contributed to very unfavorable prospects. In addition to adverse weather conditions, it now appears quite probable that grasshoppers, cutworms, Says plant bugs, and in certain localities, Mormon crickets will also take their toll.

Field work was chiefly confined to planting corn and fallowing; perennial forages in rows were cultivated, and the first soil moisture samples taken.

The station herd of cattle was turned out on native pasture and will be held there for about two weeks until the summer mountain range is ready. Lowland prairie grass is extremely poor, very little growth having occurred on upper slopes. A car of exhibition cattle was shipped to the State College to be shown in connection with the Montana Stockmens' Convention next week.

Visitors included J. M. Stephens and A. E. Seamans. Clyde McKee, Ralph Mercer, R. H. Bamberg and G. A. Mail of Montana State College, also conferred about various lines of work.

Maximum temperature, 79°; minimum, 37°; precipitation, 0.06 inch.

JUDITH BASIN:

Mean temperature was 3.8° above the normal, and the wind blew almost continuously throughout the week with an exceptionally high wind on the 11th. Severe soil blowing was noticed on some fallowed fields, and spring seeding suffered from this effect. Evaporation has been very high due to excessive air movement, and thick stands of grass are very much in need of moisture. Early spring seedings where moisture was sufficient for germination are holding on with very little growth. Field work in general has been plowing for corn and fallowing.

Maximum temperature, 75°; minimum, 31°; precipitation, 0.01 inch.

HUNTLEY:

Dry and windy weather has continued throughout the last week and while most dryland crops appear to be holding their own, very few of them have shown any advancement. All grasses and spring-sown grains in the rotations are showing a good stand, but on some plots the winter wheat and rye is very uneven. Corn planting and the seeding of a block of alfalfa varieties was completed early in the week. It is doubtful if the corn on spring plowing will emerge with a uniform stand until rain comes, as those seedbeds seemed to dry out rapidly during cultivation previous to planting.

Fall pigs were weighed and placed on the alfalfa pastures May 11. The forage is starting well and is in very palatable condition. Winter rye in the annual-crop pasture rotation is late and will not be ready for grazing for some days.

A few grasshoppers are hatching in waste lands, but the number is much less than at this time last year. To date, no hatching has been found on the cultivated land.

J. M. Stephens visited the station May 12.

Maximum temperature, 81°; minimum, 26°; precipitation, Trace.

SHERIDAN:

The weather continues dry with high winds the greater part of the time and rather high average temperatures for the season. Grass and spring grain made good progress during the week, but much of the winter wheat needs moisture. Mostly miscellaneous work, such as hauling manure from the corrals and cleaning up the old orchard, occupied the most of the week.

Crickets came in on the west side of the station south of the railroad early in the week. A county dusting crew started on them the next day after they were first noticed, apparently exterminating that band, and have been working on land immediately west and north of the station since, where the crickets were thick, and apparently where those found on the station came from.

On land worked this season the soil apparently has dried out the full depth worked. On land not worked there is a heavy crust on the surface, below which the soil still remains wet and sticky.

Maximum temperature, 79°; minimum, 38°; precipitation, Trace.

MANDAN:

Agronomy - The past week has been unfavorable for field work and crops. High winds prevailed on two or three days, and temperatures were low over most days. A killing frost occurred on the night of the 12th. Oats, barley, and flax were badly damaged. The soil is so dry it is doubtful if they will recover. Plowing for corn has been completed, and the seed blocks have been planted. Some seeding was continued on field P.

Maximum temperature, 78°; minimum, 25°; precipitation, T.

Cooperative Grazing Experiment - Yearling steers for the experiment arrived on the 14th. Pastures are all in poor condition; Carex filifolia shows a poor growth for this time of year. Blue grama grass made a start about three weeks ago but has made very little growth. It has been thinned out by the drought. Crested wheatgrass pasture is in good condition for grazing, but it cannot last long without rain.

Horticulture - Most of the week was spent in fruit breeding work, emasculating and hand crossing in the field being in progress. Plums, Chinese cherries, Chinese peaches, pincherries, sandcherries, and Juneberries have been emasculated for crossing work. A temperature of 25° was recorded on the night of May 12, but did less damage to fruit blossoms than might be expected. About 10 percent of the pistils of plum blossoms were killed, while stamens and petals were not injured. A later examination of the apple orchard suggests that probably 75 percent of the pistils are killed.

All trees planted in field or nursery this spring have been watered, and stands appear to be good. Apple and plum seedlings in the seedbeds suffered but little damage from the frost.

The dry weather continuing, but little progress in vegetable growth is observed. All early planting of vegetables in the acre garden has been completed, and early cabbage and cauliflower have been set out. So far peas and radishes are the only vegetables showing germination and that only feebly.

Cutting of asparagus started May 6 and was giving good yields up to May 12, when the temperature dropped to 25° with resultant freezing of shoots to the ground line.

The frost also did some damage to chrysanthemums and lilies on the grounds. Tulips were checked for a time, but they recovered and are making a fine show at the present time.

Shrubs in bloom at the time of writing are Spirea arguta, Ribes aureum, and Syringa dilatata.

Cutting grass on lawns was commenced on May 13 and has been in progress since, as has the renovating of shrubbery and tree groups.

Arboriculture - Conifer seed beds and Chinese elm seed were planted during the week. Conifer transplants have been irrigated, and testing blocks have been cultivated. The heavy frost during the week killed 100 percent all seedlings which had emerged of green ash, hackberry, and honey locust. Probably about 10 percent of the seedlings of these species have not emerged, so there is a chance of some stand if moisture is received in the near future. Chokecherry and caragana seedlings received only minor injury, and American elm seedlings show no injury at all. Considerable damage was done to blossoms on older trees. American elm seed was completely ruined in several localities. Other localities appear to have escaped injury. Rain is badly needed for everything.

BELLE FOURCHE:

The spring drought continued unbroken during the week, and strong winds were of frequent occurrence. Wind storms filled the air with dust on the evenings of May 10 and 11, but they were of brief duration and did little damage aside from bruising leaves of small grain. An extremely high wind prevailed throughout the day of May 12, the velocity averaging 30 miles per hour from 8:00 a.m. to 1:00 p.m., and 28 miles per hour from 8:00 a.m. to 5:00 p.m. Soil blowing was very extensive and the most destructive to crops that has occurred in this section. Wind-blown soil from adjacent fields did considerable damage to rotation plots, and some reseeding of small grain, sweetclover, and listed corn was necessary where the crops were smothered under loose soil.

The development of practically all small grain was checked more or less by wind or soil blowing injury, but other crops made a good growth on areas where no soil drifting occurred. The soil has dried very rapidly, and lawns, pasture grasses, and hay crops are beginning to suffer from lack of moisture. Livestock ranges north of Newell are becoming quite dry, and a large proportion of the grass on heavily grazed areas apparently is dead.

Corn was planted early in the week, and plowing summer fallow land was completed. Roads and alleyways were listed, and corn plots were springtooth harrowed to check soil blowing. Plots destroyed by soil blowing were reseeded.

Maximum temperature, 83°; minimum, 28°; precipitation, 0.05 inch.

ARCHER:

On the whole the weather during the week ending May 15 was favorable for plant growth and field work. The small cereals are emerging with good stands. The prairies are green and the trees are beginning to leaf.

Grass, alfalfa, sweetclover, peas, and flax seedings have been made, and corn is being seeded in the dairy field. The cultivation of trees is in progress.

J. M. Stephens and Director W. L. Quayle visited the station May 10. Dr. B. Ira Judd of the Soil Conservation Service visited the station May 14.

Maximum temperature, 82°; minimum, 28°; precipitation, 0.18 inch.

NORTH PLATTE:

Light showers fell the first part of the week, but high winds soon dried the surface of the ground and thickened the air with dust. The precipitation for May to date is below normal, and available soil moisture is low. The rainfall for the spring has mostly come in light showers of a quarter of an inch or less, adding very little to the soil moisture supply.

Corn planting is in progress in this locality. Corn has been planted in the field plots. The cooperative hybrids will be put under irrigation. Potatoes in the D.L.A. plats have emerged and are making good growth. The spring small grain is looking good and has made rapid growth in the last two weeks. Several of the summer tilled plats have been prepared during the week.

Supt. Zook and M. L. Baker attended the feeders day at the Experiment Station at Valentine, Neb., Saturday.

Maximum temperature, 81°; minimum, 39°; precipitation, 0.09 inch.

AKRON:

This station would like to report some spring rainfall, most assuredly, but this week has been another of local showers with the station receiving no measurable quantity. There was, however, a trace reading on five of the past seven days. The lack of spring rainfall is now becoming serious, with spring grains at a standstill and winter wheat wilting seriously even on fallow. The listing-in of corn, however, is progressing satisfactorilly on conserved soil moisture in this very dry section.

Agropyron smithii is showing its rather super ability to spread and cover the ground when planted in 44-inch rows. That seeded last spring is sending up shoots from underground rhizomes wide of the parent row. Rhizome selections planted in 44-inch rows in the fall of 1935 have completely covered the intervening space this spring, despite the fact that it was difficult to find above ground evidence of rhizomes last fall.

First date of seedings of beans and proso were made today.

Mr. O. B. Orr of the Washington office, and Mr. Burns the local administrator, of the Resettlement Administration visited Thursday. Mr. Crosscheck of the Cheyenne Horticultural Station delivered fill-in trees Friday morning. D. W. Robertson of the State College visited Friday. Wayne Austin of the Soil Conservation Service office at Colorado Springs spent Friday and Saturday here in the interest of the cooperative grass nursery.

Maximum temperature, 87°; minimum, 33°; precipitation, Trace.

COLBY:

This week has been mostly dry, fairly warm, and windy with some soil blowing taking place every day but two. It was generally unfavorable to crop growth on account of the heavy loss of soil moisture. Winter wheat is beginning to wilt generally, and on all but the fallow fields it is firing rather badly in most places. Some fields continue to blow almost daily. On Monday we had one of the most severe dust storms of the year, which damaged considerable wheat which had not been hurt previously. Most of the wheat is from 6 to 8 inches high and is jointing.

The wheat on the station is making fairly good growth. The stand is fairly thin on all plots, and thistles are fairly numerous in the drill rows, especially where the wheat is thinnest. The thistles help use up the moisture, and the wheat is wilting on almost all but the fallow plots. Rye shows better stands and has made faster growth, but it is wilting worse than the wheat. The peas and the spring small grains are growing nicely and as yet do not show a lack of moisture. The station pasture, which is practically all weeds, is almost dried up.

All the fallow plots were plowed or listed today, except those which are scheduled to be worked at some other time. Those which had been worked previously were free of weeds and turned up moist and fairly mellow. Those which were in row crop last year, but not worked previously this year, had a scattering stand of thistles up to 3 inches high, which had sapped some of the moisture. Those which were in small grain last year, but had

not been previously worked this year, had a thick stand of thistles about 3 inches high in the old drill furrows and turned up almost dry.

Maximum temperature, 88°; minimum, 38°; precipitation, 0.08 inch.

HAYS:

Although the temperatures have been moderate and the sky has been part clouded practically all week, the drought has been severe on wheat, especially on cropped land. On fallow the growth has been checked and perhaps its maximum possibilities have been slightly reduced, but it has not yet fired and there still seems to be considerable available moisture in the soil although it is not over abundant. Appearance and condition would still justify estimates of maximum yields of 25 bushels on fallowed land. The wheat on cropped land has deteriorated a great deal during the week, especially that sown on wheat stubble and sorghum stubble ground. Wheat on corn stubble ground has not suffered as much, perhaps due to the fact that the corn perished without having made much growth last year. On wheat stubble and on kafir stubble land where the wheat is burning so badly, it appears unlikely that maximum yields will exceed 10 bushels, and on most of such land 5 or 6 bushel yields will probably be the top; yields will range all the way from this to zero.

On the pasture experiment where wheat was sown on fallow, the pastured wheat has almost caught up with the unpastured, - it now averaging only about 1 inch shorter than the unpastured. The growth, however, appears to be thinner and the foliage less dense. As for stage of development, there seems to be little difference; wheat on all fallow, pastured or unpastured, is in the boot, and the earlies heads will not emerge for a few days. Wheat on fallow averages about 12 to 14 inches high. On cropped land it is from 4 to 8 inches high, and most of it is very badly fired. The wheat sown with the various drills on cropped land is all fired alike -- there seems to be no difference at the present time, even though earlier in the season that sown with the Peacock drill appeared to have some advantage. On fallow, the wheat seeded with the Peacock drill is somewhat taller than wheat seeded with other drills, otherwise, there is little difference.

Oats continue making a spreading growth and cover the ground. Barley also covers the ground and has started some upright growth. Spring wheat is more like the oats, and thus far shows no seed stalk development. The crops have not fired but are now wilting and apparently in need of moisture, although moisture determinations indicate that the amount present should be sufficient for present needs. Peas have made but little growth during the week; they are 6 inches high and at a standstill, while a thick stand of Russian thistles is thriving and bids fair to hide the peas in a short time.

Maximum temperature, 89°; minimum, 37°; precipitation, 0.10 inch.

GARDEN CITY:

On four days of the week a trace of moisture was received and on one day 0.01 inch. Thus far, this has been the driest year on record, which goes back to 1908. There was dust in the air on three days, but none of the storms were severe.

There is a sharp contrast between wheat on fallow and continuous wheat. The continuous is burning badly, while that on fallow is still green, but does show injury due to drought. The wheat drilled in 16.5-foot row milo stubble indicates that the milo did not use all the moisture last year, for there is a strip 6 to 8 feet wide between the stubble rows which is green. The rest is burning, except that immediately in the stubble, which is green due to the snow which was caught.

The plots that were scheduled for May working were plowed, listed, and basin listed this week. Rye was turned under for green manure. The rye

was injured considerably by drought, and only a few heads had formed.
Maximum temperature, 90°; minimum, 43°; precipitation 0.01 inch.

TUCUMCARI:

Precipitation of 0.91 inch on the 9th, followed by the warmest weather of the year, caused rapid growth of vegetation. Trees and ranges are approaching a "normal" appearance, so far as one can remember their condition in years prior to 1934.

The dammed lister furrows held magnificently Sunday, when 0.80 inch of rain and hail fell within some 20 minutes. A great deal of criticism has been heard concerning the damming attachments, but they appear to be of some value. They are adapted, of course, only for blank listing, and unless rains fall between early listing and the next cultural work they can be of no benefit. The dams, if not too large, are not troublesome at the second field operation, whether splitting middles or pulling in ridges.

Roads were graded Monday when fields were too wet to work, and since that time the tractor and field cultivator have been going steadily, pulling in lister ridges on plot and increase land. Another field cultivation, diagonal of the field, will be given before planting.
Maximum temperature, 91°; minimum, 52°; precipitation for the year to date, 3.19 inches, or about ¾ inch below normal for the period.

DALHART:

Field operations during the week have included chiefly the plowing of the rotation plots. The cleanup of soil drifts also was a daily job. Soil blowing, while not alarming, was bad on two days, including today. Another black duster came in from the northeast on Wednesday evening. These have not been as severe as those in 1935. One rather felt that it was late in the season for these black blizzards, until memory jogging caused one to remember that one of the worst ones we ever had was in August, 1934.

The soil turns over moist but apparently with only sufficient moisture to give it that appearance. Soil moisture sampling today indicates that there is no more than enough soil moisture to give spotted germination if planting were attempted. The middle of May planting was omitted. It is not planned to plant until moisture is received or, for the rotations, until in June.

Trees continue to show the usual continued drought injury. Chinese elm trees planted on the adjoining Country Club in 1931 and 1932 are showing a high death loss this spring. This is the first loss that has occurred there, and they have had excellent care. Their death loss there checks with our observation on the adapted species, which is that very little loss will be experienced under good care until the trees are 4 or 5 years old or 12 feet or more in height.
Maximum temperature, 92°; minimum, 52°; precipitation, 0.54 inch.

BIG SPRING:

Rains varying from light showers to 2 inches were received over the county during the night of May 9 and the morning of the 10th. The Station received 0.84 inch, which put the top soil in fairly good planting condition. However, it will not last long with the high temperatures and winds which have prevailed during the last few days.

Cotton planting has been the order of the day in all parts of the county where sufficient moisture was obtained. This rain will also start the grass in the pastures, but more will be required soon. Considerable planting was done on the Station during the week. This consisted of cotton

varieties and spacing, May 15 varietal date of grain and forage sorghums, cowpea and soybean varieties, peanut varieties, and the May 15 date of cotton with three varieties. Other work has consisted of harrowing rotation field and preparing it for staking.

The year's cattle feeding experiments will be completed May 28, at which time the Annual Feeders Day Meeting will be held.

Mr. J. M. Jones of the Texas Station visited the Station May 10.

Maximum temperature, 96°; minimum, 51°; precipitation, 0.84 inch.

LAWTON:

Scattered rains during the past week covered the southwestern part of the State fairly well. At present, it is the general opinion among farmers that there is sufficient moisture to mature the small grain crops in pretty good shape. This may be true if subsequent temperatures continue to be cool. Some hail damage was reported within the county, but it was not extensive. Station records show that 1.48 inches of rain fell May 10 to 12. A dashing rain of 0.82 inch fell within about 30 minutes on the 10th and caused considerable erosion on some of the sorghums in the nursery project.

Army worms are at present very destructive in various localities south of Lawton. Beards have been stripped off the wheat, and alfalfa and some early planted row crops have been severely damaged. Most of the injury is confined to low lying fields where vegetative growth is rank. Such outbreaks are not uncommon in a year like this one.

Cotton has emerged slowly and unevenly during the cool, cloudy weather that has prevailed. So far, pretty good stands are indicated on station plots.

A few fields of volunteer wheat are observed throughout the county, and very inferior yields will be obtained. Volunteer oats are also very unpromising. Spring seedings of oats headed quite short, but good yields are anticipated where good seedbeds were prepared.

About 25 local farmers spent the afternoon of the 11th looking over small grain projects. Esaw winter barley with its large plump heads, short beards, and medium growth of straw attracted more attention and more favorable comment than most any thing else. Most of the farmers present were membersof the Comanche County Farm Advisory Council.

Maximum temperature, 93°; minimum, 46°.

WOODWARD:

Despite moderate temperatures and cloudy skies wheat has continued to deteriorate. While there are numerous signs of rain, the total received over the past week was a pitiful 0.05 inch. People coming into this sandy area from hardland sections report that wheat is holding up much better here than there. This is due to lighter stooling and less vigorous early growth. The moisture apparently is all exhausted, whatever the method used. Only 1.28 inches of rain have been received in two months.

A variety test of poppies is making a most gorgeous show. Hundreds of people have visted the station to see the iris. Many varieties of day lillies came on all at once this season. Many forms and varieties of penstemon make an interesting study. A dozen varieties of achillea give rich and dainty foliage effects. One plant that is showing up especially well for rock gardens is Saponaria osymoides, another is the evergreen Potentilla tridenta, and a third is the native Scutelaria. Sprawling as a groundcover or trained on a trellis, the overblooming honeysuckle should be grown by every householder. This season it is "nearly all bloom". The native spiderwort should be neglected by no one who desires a brilliant flower of easy culture and long blooming season.

Dr. F. W. Albertson of the Fort Hays State College is visiting the station today with his botany class.

A variety of work has been accomplished during the week, such as planting grass on the Forage project; working on Cereal wheat nursery; harvesting alfalfa; planting trees, shrubs, and perennials; mowing lawns; spraying orchard; and planting tomatoes.

Maximum temperature, 94°; minimum, 50°; precipitation, 0.05 inch.

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WEEKLY STATION REPORTS

OF THE DIVISION OF

DRY LAND AGRICULTURE

BUREAU OF PLANT INDUSTRY

U. S. DEPARTMENT OF AGRICULTURE

MAY 22 1937

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REPORT FOR THE WEEK ENDING MAY 22, 1937.

HAVRE:

Precipitation since April 1 has totaled only 0.46 inch, and most vegetation is either at a standstill or drying up. With an increasing cultivated area planted to crops which have failed to emerge or being prepared for fallow, soil blowing is becoming more widespread during each windstorm. One of the most prolonged gales in station experience occurred on the 18th, the wind averaging nearly 35 miles per hour on the 10-foot anemometer for five hours, during two of which it slightly exceeded 41 miles per hour. Some drifting occurred on exposed knolls in the experimental field. Reports from nearby localities indicate that possibly 20 percent of the small grain acreage has been damaged by this and previous storms.

The potato rotations, bean and corn varieties were planted, and miscellaneous dates of seeding were made. Plowing for fallow has been completed, and weeds have been hoed in the winter hardiness nursery.

Calves were branded and vaccinated, preparatory to moving the cattle herd to the mountain range next week. The growth of grass at higher elevations in that locality is fairly satisfactory, although rains will be needed there before long. General farm work has been confined largely to fallowing, repairing fences, and irrigating alfalfa.

Visitors included Prof. E. A. Hardy and party from the University of Saskatchewan; W. F. Russow, representative of G. L.F. Mills, Buffalo, N. Y.; and several local farmers who inspected crested wheatgrass and Ladak alfalfa plantings.

Maximum temperature, 85°; minimum, 33°; precipitation, 0.09 inch.

JUDITH BASIN:

Field work for the week included plowing and duckfooting for fallow, and plowing and preparing corn land for planting.

Mean temperature was slightly above normal with exceptionally strong winds the first half of the week. Severe soil blowing on some ranches was noticed.

Thick stands of grasses have burned very badly, and only a minimum yield can be expected if the drought continues. Spring grains on the better methods are still in fair condition and can produce good yields, should we receive moisture soon.

On the 20th, 0.10 inch of rain fell, not enough to be of any great benefit.

Maximum temperature, 81°; minimum, 29°; precipitation, 0.10 inch.

HUNTLEY:

Temperatures ranging from above 90° to below 32° during the week with crop damage greater on the warm day than on the cool one was a new experience for this season of the year. A hot wind on the warm day caused considerable tip-burning and wilting of seedling grains and peas, whereas the light frost touched an occasional barley plant only.

Two showers occurred, which taken together may supply enough moisture to bring up the corn. Inspection of the various plantings has shown much of the seed sprouting but with the soil drying out rapidly around it. The rains also refreshed small grains, which, with the exception of winter wheat on continuous cropping plots, are making a fair growth. Winter wheat on continuous cropping is in very poor condition due to drought and the heavy weed growth which has started in the backward plots.

Spring pigs were turned on to the winter rye in the pasture rotation late in the week. The forage is thin but is making a good growth.

Maximum temperature, 93°; minimum, 26°; precipitation, 0.30 inch.

SHERIDAN:

High winds with high temperatures continued over the first two-thirds of the week, followed by showers and cooler weather the last of the week. Rain was sufficient to be of benefit to late plantings and spring grain, but probably was not sufficient to have much effect on fall plantings where more of the original moisture has been used.

Flax, and corn in the varieties, seed blocks, and bulk fields, and potatoes were planted. Garden plants and fruit stock replacements brought from Cheyenne by Dr. Hildreth, and some replacements in the shelterbelt, were planted also.

Maximum temperature, 88°; minimum, 35°; precipitation, 0.58 inch.

DICKINSON:

A shower of 0.28 inch on the night of May 19 gave temporary relief from soil blowing which was persistent during most of the previous 10 days. Temperatures remained near normal. Vegetation made slow progress because of the dry soil. Some grain fields in the district are fair in appearance, but most fields show some wind damage and are weedy. Some damage by cutworms is reported. Grasshoppers have started to hatch but are still too small to damage crops.

About 20 acres of corn was planted with the lister on land where some blowing has occurred.

Plums and apples are now in full bloom. Most varieties have a fair to heavy amount of bloom on the wood which remains alive. More injury and killing becomes apparent as the season advances.

Visitors included E. G. Davis, Bureau of Entomology, Bozeman, Mont.; V. T. Heidenreich, U. S. Indian Service, Elbowwoods, N. Dak.; and William Leary, Extension Agronomist, Fargo.

Maximum temperature, 76°; minimum, 30°; precipitation, 0.30 inch; precipitation to date in May, 0.55 inch.

MANDAN:

Agronomy - High wind prevailed on 3 or 4 days during the past week. There was no serious soil blowing on the station. Corn was planted in the rotations on the 17th. All other corn planting was completed early in the week, and potatoes were planted in the rotations. Oats and barley that were injured by frost last week are in a serious condition. A number of plats will likely need to be reseeded. The top soil is so dry at present that the reseeding could not start without rain. Crested wheatgrass is starting to dry up in spots in the fields.

Two light showers fell during the week, and the weather has remained cool.

Maximum temperature, 82°; minimum, 41°; precipitation, 0.17 inch.

Cooperative Grazing Experiment - The steers were branded during the week, and will be started on pasture next week. The crested wheatgrass pasture is in good condition for grazing at present. The native pastures are in poor condition.

Horticulture - Fruit breeding work has been in progress during most of the week; plums and other prunus species receiving most attention.

Potatoes have been treated and cut, and will be planted early next week. Varieties under test include Early Ohio, Irish Cobbler, Triumph, Chippawah, and Warba. All plantings are dry and rains are badly needed at this time. Many fruit trees are dying.

Germination of early planted vegetables has been noticeable the last week. Beets, carrots, peas, onions, and radishes are up, but the stands are very spotted. Transplanted plants such as cabbage, cauliflower, lettuce, and celery are now established with but few losses. It was necessary to give copious waterings at the time of setting out the plants.

The lawns about the station buildings are showing signs of need of moisture and are being irrigated at the present time.

Hopa crab, native hawthorn, and a few scattered lilacs, are new shrubs in bloom since the last report.

The plot of ground west of the greenhouse intended for a testing of collections of hardy perennials and shrubs where water and winter protections may be supplied was seeded during the week to crested wheatgrass, the Canadian "Fairway" strain being used.

Arboriculture - The cleaning of blown in thistles and other refuse from hedges, windbreaks, and tree blocks has been carried on most of the week. Hackberry and American elm seedlings have been irrigated, and almost constant watering has been carried on in the conifer nursery. Snow fence has been erected all around the conifer seed beds to reduce the wind movement and drifting soil injury to seedlings. A fair stand of ash seedlings has emerged since the frost damage last week.

Hackberry and honey locust stands are going to be very ragged. Most of the seedlings had emerged previous to the freeze. More damage was done to chokecherry seedlings than was apparent last week. Entire rows have died this week as a result of a combination of freezing, drought, and blowing soil injury.

Visitors for the week included W. W. McLaughlin, Chief, and M. R. Lewis, Agricultural Engineer, Division of Irrigation, Bureau of Agricultural Engineering.

BELLE FOURCHE:

Warm, dry weather prevailed the greater part of the week, and strong winds were of almost daily occurrence. Some soil blowing took place, but the dust was settled by a slow drizzling rain on May 20 and 21. Only 0.22 inch precipitation was recorded, but much larger amounts were received within 25 miles of Newell in nearly all directions.

A total of 0.43 inch of precipitation has been recorded to date in May, as compared with the average for the month of 2.96 inches. No rains heavy enough to be of benefit to vegetation have been received this spring, and all crop growth has been dependent upon the moisture stored in the soil from the heavy snow on March 23. Soil samples taken on spring wheat plots during the week showed the top 6 inches of soil to be quite dry, and the only moisture available for future growth was confined to the underlying 5 to 9 inches of soil. The total depth to which moisture had penetrated the ground ranged from 11 to 15 inches on land cropped the previous year, and from 19 to 24 inches on land summer fallowed in 1936.

Small grain damaged by soil blowing last week is making very slow recovery, but uninjured grain made normal progress. Winter rye is about 9 inches high, and fall seeded grass has made a surprisingly good growth; but a heavy crop of Russian thistles on the grass plots have utilized most of the available moisture, and the ground is cracking.

C. A. Hauptman and J. R. Schwabrow, U. S. Geological Survey, Midwest and Casper, Wyo., visited the station during the week, in connection with the artesian well which has been drilled to a depth of 4,400 feet, completing the present contract. The drill penetrated 50 feet into the Minnelusa formation, and water flowed over the top of the well, but only at the rate of about 0.5 gallon per minute. Negotiations are being made to drill the well 200 feet deeper into the Minnelusa formation, as a much greater flow of water is anticipated from lower sands.

Maximum temperature, 83°; minimum, 38°; precipitation, 0.22 inch.

ARCHER:

The weather during the week was varied as to temperatures but continued dry with rather high winds. During May 20 large clouds of dust raised from the lighter soils, and considerable shifting of these soils also occurred. During the night of May 21 the temperature dropped to 29°. Unless there is a marked change in the precipitation trend, the month may prove to be next to the driest May in the history of the station. The driest May, 1919, received 0.31 inch of precipitation. To date this year May has received 0.37 inch. Some farmers have ceased putting in crops until rains occur.

The trees are leafing, and prospects are good for a fruit crop. Winter rye on fallow is jointing, but the grasses are showing signs of drought. The soil on the plowed corn plots is so dry that it is doubtful if emergence will take place before rains occur.

The seeding of corn in the dairy field and the rotation plots is practically complete. The trees have been cultivated.

To date the station lamb crop approaches 150 percent. About half of the wews have lambed. The report of the wool clip shows that the old range ewes purchased from the Warren Livestock Company in 1934 produced an average of 10.1 pounds of wool. The daughters dropped in 1935 produced an average clip of 14.5 pounds. The daughters and granddaughters dropped in 1936 produced an average clip of 12.1 pounds, and 20 head of 1936 range lambs produced an average clip of 8.8 pounds. The average age of the fleeces was 11 months. The ewe which as a yearling produced 23.9 pounds of wool in 1936 produced 18.3 pounds this year. Her 11-month old buck lamb sheared 16.2 pounds of wool. The breeding bucks were also range animals.

Director W. L. Quayle visited the station May 20. M. B. Nichols, Extension Holstein-Friesian representative of Portland, Ore.; Steve Goodman, Extension Dairyman of the Colorado Agricultural College; and county agent Charles Llewellyn visited the station May 22.

Maximum temperature, 81°; minimum, 29°; precipitation, trace.

NORTH PLATTE:

The weather for the week was warm, and the two light showers which fell were of very little benefit to the crops. Precipitation to date for the month is over 2 inches below the normal for May. The spring small grain on cropped land is suffering because of the lack of moisture. The grain on fallow is making normal growth and does not show the effect of drought. There is a decided difference between the drought resistance of crested wheatgrass and bromegrass. The crested wheat is in need of moisture while the brome seems to be standing the drought.

Corn planting has been completed, and the earlier plantings have emerged. There is enough moisture in the corn land to promote normal growth. The basin lister attachment was used on all corn plats to conserve as much moisture as possible. The alleys in the field plots have been cultivated, and all of the summer tilled plots are being disked prior to plowing.

Grasshoppers are causing much concern in this locality. Many have hatched but so far have not started to migrate to the crops. Poison is being used to prevent as much damage as possible.

The date of the annual Crops Field Day has been set for June 23.

Maximum temperature, 91°; minimum, 49°; precipitation, 0.24 inch.

AKRON:

No rain as yet, and we are getting to see just how long crops can hold out. Winter wheat is jointing, and it is showing drought injury on all but fallow preparation. Spring grains remain green, but there has been no growth for the past two to three weeks. Since a rain of 0.51 inch March 19 there has been no period rainfall exceeding 0.25 inch, and only 0.79 inch altogether. The normal quantities are 2.16 inches for April and 2.83 inches for May. We have already experienced an unusual spring drought period of more than 60 days, with only a few days left for correcting a heavy May deficiency.

Hybrid corn was planted in the variety experiment, mostly hand work because of the shortage of seed. Green manure rye plots were plowed under about 20 inches tall, just breaking into head. Some preliminary work was accomplished on the rotation plots to be seeded to corn and sorghum. Fill-in trees were planted in the new forestry experiment No. 1. Other work was the cultivating and hoeing of the young forestry and border planting trees.

Maximum temperature, 91°; minimum, 32°; precipitation, 3 trace readings.

COLBY:

Two rather severe dust storms characterized the weather this week. Fortunately both were of rather short duration, each lasting less than a half day. The one on Wednesday afternoon followed a rain in the night Tuesday. The rain was pretty general over the county, but varied widely in amount, ranging from a sprinkle in the east part to almost a cloudburst in places in the west half. The dust storm Friday afternoon was rather picturesque as it rolled in from the northwest underneath a bank of heavy clouds. It looked as though it would be a gust followed by rain, but it turned out to be one of the worst dust storms of the year, which lasted for several hours causing much soil blowing. Since nearly all the bare land has been worked so that the surface is cloddy in nearly all cases, there was very little damage done.

Wheat is badly in need of moisture. All but the summer fallow fields began to burn the fore part of the week. Where the rain was heavy enough to penetrate into the soil the wheat has revived considerably. At the station the precipitation amounted to almost a third of an inch, and the wheat has made a remarkable growth. All the plots are looking much better than last week, except those which were stubbled in. They are wilting some. The spring small grains are growing nicely.

All the plots which are to be put to row crop and which had not been worked previously were either one-wayed or duckfooted. Thistles are rather numerous and are coming up thick since the rain.

Maximum temperature, 93°; minimum, 44°; precipitation, 0.35 inch.

HAYS:

The weather has been partly cloudy all week but dry with two days of moderately heavy winds accompanied by maximum temperatures of the week, which has been extremely severe on all small grain crops. The agony of the drought was relieved for the moment by a shower of 0.51 inch late yesterday afternoon, and it is cool today.

Winter wheat on cropped land varies from 4 to 10 inches high and is developing a very thin growth of seed stalks, a small percentage of which are now heading with difficulty. Needless to say, the heads are very small. Much of this wheat is so poor, from a practical standpoint it would seem wise to abandon it and fallow the land. On fallow winter wheat ranges from 12 to 24 inches high, has developed a fair growth of seed stalks, and perhaps 50 percent of the heads are showing with from 1 to 15 percent fully emerged.

Referring to the plots of which one-half were pastured, the pastured portion is nearly as tall as the unpastured, has a slightly thinner stand of seed stalks and slightly less dense foliage, and is a little slower heading. From a distance the unpastured portion is far enough advanced that the heads change the color of the wheat, whereas on the unpastured no heads are observed although a few are out.

Barley, oats, and spring wheat, which apparently had not suffered from drought a week ago, wilted badly during the week and suffered to considerable extent. Barley on cropped land ranges from 6 to 10 inches and on fallow from 10 to 15 inches high. It has reached the stage of development where many of the beards are showing but few heads are fully out. Oats are from 4 to 9 inches on all cropped land and up to 12 or 14 inches on fallow; probably 80 percent of the oats are headed. Spring wheat ranges from 7 to 12 inches high and is not yet heading. These

spring crops, all of which started nicely in the spring, have deteriorated to an almost unbelievable extent within one week's time. Very favorable weather from this date on will be necessary for these crops to develop much grain. Canada field peas remain at a standstill at about 6 inches. A good stand of Russian thistles among the peas has reached the same height and is going forward with a good growth.

Thus far there has been no favorable conditions for seeding of either bromegrass or alfalfa. Alfalfa seeded last spring on fallow has survived with a fair stand. It made a growth of about 4 inches, at which height it has remained for the last two or three weeks and now is turning brown.

Weeds are numerous but very small in most of the winter wheat plots. In the spring seeded crops, however, the weeds are thick and some of them are about as high as the grain.

Maximum temperature, 100°; minimum, 49°; precipitation, 0.53 inch.

Visitors at the project during the week totaled 73 including some U.S.Dept.Agric. men as follows: W.C.Lowdermilk, F.L.Duley, and R.R.Drake.

GARDEN CITY:

Five days out of seven have been dusty, three being rather severe. On Wednesday 0.14 inch of moisture was received, which is the most rain received at one time since March 13. The wheat on cropped land is nearly dried up, and next week will probably see its finish unless considerable moisture falls. Wheat on fallow is beginning to head, but it too is burning badly.

Field work consisted of cultivating plots that were weedy and hoeing weeds. Soil samples were taken on M.C. wheat plots A, B. C, and D. The moisture on all plots was below the wilting coefficient.

Maximum temperature, 95°; minimum, 43°; precipitation, 0.14 inch.

TUCUMCARI:

The week has been warm, windy, and without precipitation, with rapid drying of fields and range land. Wheat to the south of Tucumcari, which offered the best prospects since 1931 up to a month ago, is now in pitiable condition. Some fields will produce a little grain even without additional rain; other fields are past saving; while the majority of the crop, which it appeared could average 15 bushels a month ago, would perhaps average 3 to 7 if rains arrived immediately.

The first planting of corn, cotton, and peanuts was made during the week, and the Sudan grass pasture was lister planted. No other plantings have been made. Early listed land has been "pulled in". As soon as rain is received this land will be again cultivated and then planted.

Precipitation of 3.16 inches in 1937 is only about 1 inch deficient, considering the 32-year average for this period.

Maximum temperature, 94°; minimum, 53°; evaporation, 2.635 inches; wind velocity, 7.4 miles per hour.

DALHART:

Work during the week has consisted principally of finishing the plowing of the increase fields, field cultivating of fall worked soil, watering conifer replacements, seed cleaning for nursery planting, and miscellaneous seasonal work. Three showers which totalled 0.26 inch gave insufficient moisture for planting or for final seed-bed preparation. Already one seems justified in starting to worry about what should be planted unless conditions should change at an early date. Several localized areas received rather bounteous rains during the week.

Wednesday was another day, there have been several this spring, which was alternately clear and blowing badly. The blowing spells were of short duration. While Friday evening gave another of the now infamous Black Blizzards. This one was the worst of the current blow season and ranks rather close to the previous worst one of April 14, 1935. Both came on with awe-inspiring suddenness, and both gave the total inky-blackness of the all too common Great Plains eclipses.

Maximum temperature, 92°; minimum, 53°; precipitation, 0.26 inch. Precipitation for the year to date is 2.64 inches; the 32-year average for the same period is 4.81 inches.

BIG SPRING:

The hot weather prevailing during the past week has dried out the surface soil so rapidly that it is doubtful if seed planted during the last day or so will emerge to good stands without another rain. The May 15 date of planting of grain and forage sorghums have emerged to good stands as have also the cowpea varieties. Cotton varieties planted May 14 are emerging to rather ragged stands. It appears that in spots the soil has dried out before germination took place.

Cotton, kafir, broomcorn, peanuts, and cowpeas were planted in the rotations during the week. An increase field of Sudan grass was also planted. Other work consisted of cultivating orchard, evergreens, and shrubbery block.

Maximum temperature, 99°; minimum, 61°; precipitation, none.

LAWTON:

Sweeping in suddenly, a gale-like wind, rain, and hail storm struck about 1:00 a.m. on the 22nd. Rain fell within a short period, varying from 0.63 inch at the station to much larger amounts in various localities. Hail damage to wheat and oats was reported to be heaviest 10 to 15 miles southeast of Lawton. No damage occurred on the station. Maximum temperatures hovered around 90° to 93° most of the week but dropped to 76° following the storm. The present supply of soil moisture will go far toward normal maturity of one of the best wheat crops that southwestern Oklahoma has produced.

Damage to wheat, oats, and some row crops by the true Army worm continues on the creek bottom fields in this vicinity. The infestation on upland fields is only moderate, and serious injury is not indicated. Poisoned bait has been scattered by airplanes to some extent over a large wheat growing area 40 to 50 miles southwest of Lawton.

The oats crop, for some unaccountable reason, is quite spotted in Comanche County. In general it can be considered only fair. Covered smut is very prevalent in oats, and loose smut on wheat is heavier than has ever been observed in this territory. Although the initial development of leaf rust was late it progressed rapidly during the past 20 days.

During the past week stem rust has become quite prominent on many varieties.

Nearly 6½ tons of oats hay, excellent in quality, were baled and stored in the barn during the week. A similar amount has been cut and will be baled and stored if curing weather prevails.

The winter barley varieties and one rotation plot as well as three strains of Coker winter oats were harvested May 19 to 21. Cultivation of row crops, thinning corn, trimming the ends of row crop plots, harvesting, putting up hay, and cotton planting fully occupied available labor during the week.

Station visitors include K. S. Quisenberry, C. O. Johnston, and G. A. Wiebe from the Cereal Division, and F. A. Fenton and L. L. Liggon, A. & M. College, Stillwater, Okla.

WOODWARD:

The past week has been one with temperatures averaging well over 90°, and with three days of high wind. Nearly everyone expresses wonder at how well wheat hangs on despite adverse conditions. On sandy fields where stooling was not heavy, and early leafy growth did not develop, it bids fair on many fields to give a yield of 8 to 12 bushels. However, the end is not yet.

On the station, furrow drilled wheat has a better appearance than other. There are not so many small heads and half developed tillers. It is evener and better, though with rains it may not yield more.

Among the most uniform and cleanest appearing plots on the station are those on which milo was grown in 16-foot rows last year. Stooling was not heavy and appearance now is very favorable. Ordinarily after sorghums, the suppression of exuberant fall and early spring growth often seems an advantage to wheat.

The wheat plots with borders around them to prevent run-off have no better appearance than adjacent unbordered plots. The past two years they have given no higher yields, and apparently will give no higher yields this year.

A great many seedlings of grass varieties have been made on the station and adjacent ranches under many different conditions by the Forage Division.

A dozen Virginal mockorange in full bloom constitute the richest floral display on the station at present.

The many varieties of pinks (Dianthus) are an education in daintiness. They have been coming into bloom one after another for over a month.

Maximum temperature, 99°; minimum, 55°; precipitation, none.

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U. S. DEPARTMENT OF AGRICULTURE

MAY 29 1937

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REPORT FOR THE WEEK ENDING MAY 29, 1937.

HAVRE:

The past week witnessed a continuation of drought, wind, and dust storms, but thus far no extremely high temperatures have occurred, 85° being the maximum for May. A terrific windstorm Friday afternoon was followed by light precipitation. The general outlook over a widespread farming area is becoming serious, and even livestock must be moved to other ranges or to market if the drought persists.

Roadways were lined up and cultivated during the week. Stands of crops in most experimental projects are extremely uneven, however very few weeds are appearing. Winter rye and sweetclover for green manure were plowed under, the rye being unusually short and the sweetclover almost a complete failure.

Station cattle were driven to their summer range in the Bear Paw Mountains. Fallowing of farm fields was completed, and various repair work was done. A WPA crew is preparing the ground for a machine shed to be constructed largely from salvaged building material.

E. G. Davis of the U. S. Entomological Laboratory, Bozeman, studying the grasshopper situation, was a station visitor. In certain nearby localities grasshoppers are becoming quite numerous, particularily on range lands.

Maximum temperature, 85°; minimum, 40°; precipitation, 0.21 inch.

JUDITH BASIN:

With less than one-half of the normal moisture at this date, crop conditions are very poor. Due to practically no moisture, soil blowing has done severe damage to fields in general. On the 28th a dust storm was experienced that stopped travel on the highways for nearly an hour.

Spring grains have made no noticeable growth, and pastures are drying very fast.

Corn has been seeded on the Dry-Land Rotations and general fields, and fallowing has been completed.

Field work for the week was seeding corn, trimming rotations and cereal varieties, and weeding the shelter belt.

Maximum temperature, 86°; minimum, 35°; precipitation, 0.10 inch.

HUNTLEY:

Continued drought together with rather high daytime temperatures and a few hot winds has been reflected in some deterioration of dry-land crops. Little hope is extended for obtaining a crop of winter wheat on stubble land, but the wheat on disked cornland and fallow still has a chance. On those methods the wheat is just coming into the boot, and although it looks considerably weather beaten it is not seriously injured. Spring-sown grains look wilted during the warmest part of the day, although they again appear fresh the following morning. Where stands are thin, weeds are coming in thickly and will soon be a greater handicap than drought.

Corn on spring listed land has come up to nearly a full stand. On other cultural methods only a few plants are showing above ground, and most of them are in the border rows. A high wind on the 28th whipped the young corn about and split some of the leaves, but seemingly did no damage to other crops on the dry-land plots. Around the station buildings and throughout the countryside the wind blew down trees and telephone lines and filled the fences with Russian thistles.

Maximum temperature, 99°; minimum, 36°; precipitation, trace.

SHERIDAN:

Warm weather accompanied by considerable wind the most of the time, and no precipitation, prevailed over the most of the week. Crops are growing very slowly, with a thick growth of Russian thistles making practically as much growth as the crops over much of the land. Rye has headed, with some of it now in blossom. All grass is heading short. The varieties of corn, some bulk for feed, and a seed block of N. W. dent corn planted last week, has emerged, and also spring grain and flax sown May 19, the last named crop with a very uneven stand because of the dry condition of the surface.

Crickets have again appeared on the station, in Field O south of the highway, where some damage was done before they were brought under control. Using station labor, as more WPA labor was not immediately available here,this band was dusted and they have practically disappeared. Another band appeared today, and is now being dusted. A few crickets have appeared in other places on the station, but not thick enough to dust, and grasshoppers are thick in spots. Most grasshoppers appear to be in the irrigated sections this year however.

The remainder of the corn, beans, soybeans, and proso were sown early in the week. Some dead stock has been pulled in the shelterbelt, and elm and conifer replacements have been planted, some of the latter still remaining to be planted.

Maximum temperature, 89°; minimum, 40°; precipitation, none.

DICKINSON:

Quiet, moderate weather in the early part of the week was followed by a heat wave on Friday with a dust storm and soil blowing at night. Saturday is cooler and cloudy, with dust still in the air.

Corn, flax, and millet on the rotations planted three weeks ago have about a 10 percent stand emerged.

Fallow on the rotations was plowed and harrowed. Dead wood is being removed from the orchard and shelterbelt. Part of the trees were cultivated with the duckfoot. Moisture from the snow caused a crust to form on the surface, so that the soil in the trees breaks up cloddy in most places to reduce soil blowing.

The crop outlook at the end of May is as critical as at this time in 1936. Moisture in the soil at seeding time was slightly above a year ago, and some of the better fields still have greater promise. However, more of the crop has blown out than at this time last year. Pastures and feed crops are even worse than a year ago; and feed, seed, cash, and credit resources are exhausted. The soil is dry and powdery so that moderate winds cause dust to blow.

Grain fields are weedy. Grasshoppers are hatching in sufficient numbers to cause heavy damage to crops unless heavy rains cause vegetation to make rank growth.

Visitors included Robert Cummins, State Director of the National Emergency Council and Thomas Moody, State Administrator, WPA, Bismarck, North Dakota.

Maximum temperature, 96°; minimum, 29°; precipitation, none.
Precipitation to date in May, 0.55 inch.

MANDAN:

Agronomy - The past week continued dry with high winds during the early part and again today. The weather remained cool until the 28th, the warmest day of the season to date. Spring wheat in the rotations remains in very good condition. It is better than last year at the same time. Oats and barley are very poor. They were badly frozen back. Many of the plots were reseeded during the week. Grasshoppers are hatching out, and the young ones are thick in many places. Cutworms have done some damage in a number of plots. Corn is coming up and shows a fair stand on many plots. Millet and sorgo were seeded. Fallow plots have been plowed.

Maximum temperature, 93°; minimum, 44°; precipitation, 0.02 inch.

Cooperative Grazing Experiment - Steers were weighed during the week and started on their various pastures. They averaged 448 pounds per head. Prof. E. J. Thompson of the Agricultural College was here and graded the steers. The crested wheatgrass pasture is in good condition for grazing at present. The grass is starting to dry up in spots. The native pasture cannot hold out very long without good rains.

H. D. Cochran, in charge of the range program for South Dakota, visited the station early in the week, to secure infomation that would help in the program for that State. Mr. Peterson of the Forest Service at Lincoln, Nebr., was here in the interests of the Range program. Mr. Churchill, of the Indian Service at Fort Yates, N. Dak., visited the station, to obtain information on range vegetation.

Horticulture - The drought continues and fruit trees continue to die in large numbers. Apples and crabs seem to have suffered very severe damage from sunscald during the past two winters. The bark of many trees on the south and west sides is dead. Due to the poor condition of the trees, frost damage, and a light bloom, apples and crabs will produce little fruit this year. Native varieties of plums have set a fairly heavy crop, as have such native fruits as Juneberries, Golden currants, and chokecherries.

The second cultivation of the season has been completed and hoeing will follow next week. The second spray is now being applied, a combination spray of lead arsenate, nicotine sulphate, and lime-sulphur being used. Trees planted this spring will require watering if they are to survive.

Planting of semiformal beds including cannas and geraniums on the grounds, was completed during the week. Irrigation of the grounds also has been in progress the entire week and is about completed.

Vegetables in the field, such as tomatoes, eggplant, pepper, and late cabbage, were set out during the week. Due to the dryness of the soil it was necessary to add copious waterings at the planting time, and so far a good stand has been obtained.

The following shrubs are in bloom on the station grounds this week: Persian lilac, Tatarian honeysuckle, Vanhoutte spirea, and a few scattered specimens of Crataegus pinnatifida.

Arboriculture - American elm seed has been collected during the week. The seed is hardly mature but high winds are blowing most of it down. Spruce seedlings set out in the windbreak this year have been watered. About 98 percent are growing and appear healthy. Tree seedlings were badly cut by blowing sand last week end. Stands are becoming thinner every day and unless rain is received in the near future the entire lot will be lost. Conifer seedlings are now emerging to good stands.

BELLE FOURCHE:

The long spring drought was finally broken by a steady rain, commencing late in the afternoon of May 29 and continuing until the following afternoon. A total of 1.60 inches precipitation was received during the storm, and no run-off occurred. The rain arrived just in time to save small grain, and it relieved a very serious situation on the ranges in western South Dakota, which had become so dry that arrangements were being made to ship large numbers of livestock.

Winter rye began to burn during the hot weather which preceded the rain, and spring grain had made such a vigorous growth that it began to show signs of suffering from lack of moisture. Conditions have been very favorable for the growth of Russian thistles which have become so numerous and vigorous that they threaten to smother spring wheat on the new grass rotation plots, and all young grass, alfalfa, and sweetclover. Corn is coming up, but with uneven partial stands on spring plowing and fall plowing, owing to insufficient moisture being present in the soil at time of planting. Cutworms are doing some damage to corn, and grasshoppers are hatching out in large numbers.

Maximum temperature, 98°; minimum, 43°; precipitation, 1.26 inches.

ARCHER:

Timely rains, totaling 0.56 inch, occurred May 24, 25, and 26. So far as the station work was concerned this precipitation was very opportune. The corn was all seeded and final tillage for potato planting was started before the rains occurred. The weather is threatening today.

The earliest seeded corn in the dairy field is emerging. The crested wheatgrass, alfalfa, and sweetclover seedings on the rotation plots are also emerging. Small grains have made a good start. Winter rye is showing its first heads, however, its growth is rather short. The recent rains were beneficial to grazing lands.

During the time that the soil was too wet for field work the repair of yard fences was undertaken. Hoeing is in progress.

L. B. McWethy of the Resettlement Administration, visited the station May 25.

Maximum temperature, 81°; minimum, 41°; precipitation, 0.56 inch.

NORTH PLATTE:

Drought conditions continued throughout the week. Probably the most severe dust storm for the spring occurred on Sunday. The visibility for the day was nearly zero. The dust in the air was not from local fields but seemed to have been brought in from the south. A light shower on Tuesday evening gave temporary relief from dust. On the same evening heavy rains were general throughout most of the State. In some sections 2 to 3 inches were reported. To date the month has precipitation totaling 1.09 inches or about 2 inches below normal. The accumulated precipitation since January 1 has been deficient by nearly 3 inches.

The spring wheat in the field plots is burned beyond recovery. The oats are burned badly, and at the best no more than half a crop could be expected. The barley looks better than the other spring grain but will be far short of a normal crop. The early varieties of barley are heading. The grain on fallow is still looking good, but that on cropped land is badly burned. The corn has emerged rather spotted, and poor stands can be expected.

The first seeding of the sorghum varieties was made, and all the summer tilled plots have been disked to conserve moisture until they can be plowed.

Maximum temperature, 95°; minimum, 49°; precipitation, 0.16 inch.

AKRON:

The week started auspiciously with the first rain of any consequence since March 18. This naturally brightened an agricultural outlook that had come to look drab. Spring grains had not burned any, merely stayed dormant after secondary root development, but the winter wheat tried to joint and suffered more or less during the previous ten days. Spring grains whipped into growth and are jointing by this week end. Winter wheat, on preparations other than fallow, where not too badly burned, is heading. Early varieties in the nursery and in the variety experiment are heading, even on fallow preparation. Some winter wheat was injured by the drought to the extent that it is still hesitating about recovery of any sort. There certainly will be no excessive straw production among the cereal grains at this station this year, but it now looks like average grain production could be realized on average rainfall from now until ripening. This drought, coming as it did in the early spring and with the soil wet from 18 to 30 inches, has done a minimum of damage so far.

Teams and the tractor have been busy in the field since about Tuesday seeding and eliminating weeds. Rotation corn was seeded Thursday and Friday and the rate and spacing experiment this morning. Plowed land was as loose as when plowed but was well saturated with moisture. Prospects are bright for prompt emergence of satisfactory stands of corn.

Persian lilacs have been masses of bloom the past ten days. Vanhoutte spirea and Persian Yellow Roses are breaking into bloom this week end.

H. L. Stantz and P. V. Woodhead, Chief and Assistant Chief, respectively, of the Division of Wildlife Management of the U. S. Forest Service,visited Tuesday. They were accompanied by D. A. Arrivee, Assistant Forest Supervisor, of Lincoln, Nebr. F. A. Hayes of the U. S. Division of Soils, Lindsey Brown of the State College, and Roy Hockinsmith of the Soil Conservation Service visited Friday.

Maximum temperature, 87°; minimum, 47°; precipitation, 0.96 inch.

COLBY:

Scattered showers yesterday afternoon, which varied in amounts from very light to heavy downpours, temporarily relieved the drought situation which had become very critical during the week. Dust storms had prevailed nearly every day, and all small grains had begun to show a lack of moisture.

The rain came too late for most of the wheat, and on all of it the relief is only temporary, as droughty conditions still prevail. It is windy and dust is in the air. At the station the stubbled-in wheat is practically dried up, the plots which were worked last fall are suffering considerably, the late plowed fallow plots are wilting, the regular fallow plots are holding their own, and in the new block where the ground had been fallow for four years the wheat is very promising. Winter rye and peas were turned under this week. They were drying up rapidly. The rye averaged about 10 inches high and was about one-fourth headed. The peas were about 6 inches high. The spring small grains are all drying, even on fallow. The oats are almost headed and are about 8 inches high. The barley is beginning to head. Spring wheat is not showing heads yet. All the small grain plots are weedy, where there is any moisture.

Maximum temperature, 93°; minimum, 44°; precipitation, 0.32 inch.

HAYS:

Nearly every day clouds have drifted over, sometimes sufficiently close and heavy to make it seem impossible to escape rain, only to vanish by nightfall or during the night, and each day the soil becomes a little drier.

Wheat on cropped land continues thinning out and deteriorating. It would seem that it has about reached the end, although should rain fall immediately and be followed by favorable weather, 4 or 5 bushels might be gathered from a few plots. On fallow the wheat has defied the drought to an almost unbelievable extent. There are still possibilities for some 15 to 20 bushel yields, but to make such yields rain must come soon.

Barley and oats appear to be almost beyond recovery, except on fallow where the growth is also short and seed stalks thin. A thick stand of weeds, mostly Russian thistles, in these plots is striving for supremacy over the grain, and the weeds are making good gains.

Winter wheat, oats, and barley have had very unfavorable conditions for passing through the bloom stage and for the formation of grain. They have not reached the milk stage yet.

Although we thought we had killed most of the grasshoppers last fall, before the egg-laying season, at the present time there seems to be millions of tiny grasshoppers appearing all over the project, the same as they are appearing in commercial fields. We are today making our first spread of grasshopper poison bait over the project.

During the week plots which are to be seeded to row crops, some fallow plots, roads, and alleys have been cultivated for the destruction of weeds. Although the weeds were not very thick, they were making considerable growth.

Visitors on the project during the week, 29.

Maximum temperature, 95°; minimum, 45°; precipitation, 0.02 inch.

GARDEN CITY:

This week brought 0.81 inch of moisture in two rains, one of 0.58 inch, and the other 0.23 inch. The total so far this month is 0.99 inch, which is far below normal. These rains will help the wheat some, but much of it has been burned beyond recovery. Four days out of seven have been dusty, three of them being rather severe.

Row crop planting should begin next week, but it will be delayed unless considerable more moisture is received soon.

Maximum temperature, 89°; minimum, 50°; precipitation, 0.81 inch.

TUCUMCARI:

During the week a total of 4.81 inches precipitation has been received; 3.96 inches from late Thursday until Saturday morning; 3.23 inches during the 24 hours ending 8 a.m. Saturday. At least six deaths from drowning occurred in this immediate vicinity, highways are impassable, bridges are unsafe, and it is reported that several small railway bridges are out. From reports this morning it appears the rains were general over the southern Great Plains.

Early in the week excellent progress was made in preparing fields for planting, some planting was done Wednesday, and two planters put in a full day Thursday, getting out of the fields at 5 o'clock just before the rains totaling 3.96 inches began. When lakes disappear, field preparation and planting will again take place. Doubtless most fields now planted in this vicinity will have to be replanted.

Ranges should be the best in years in a short time, and row crops will have considerable stored moisture to draw on.

Maximum temperature, 81°; minimum, 51°; precipitation for May to date, 5.72 inches; for the year to date, 7.97 inches.

DALHART:

It is now the time of the year when planting should be started. The present plans are to start planting as soon as it is dry enough. The first part of the week was spent in rewatering trees and shrubs planted this spring. Rains prevented field work the last of the week. The total precipitation for the week was 4.84 inches; this was recorded on four days. Much of this precipitation was in the form of heavy downpours, but reasonably good penetration of the moisture is expected. Many lister furrows are still standing nearly full of water. This, of course, could be expected for the rainfall for the 24 hours ending this morning was 2.19 inches. While various

localities received different amounts of the several rains, the precipitation, according to reports, was fairly general.

Maximum temperature, 86°; minimum, 45°; precipitation, 4.84 inches.

BIG SPRING:

All field operations were halted May 27 when a good rain totaling 2.43 inches was received. This was followed by a light shower later in the week making a total for the week of 2.52 inches. This was a very general rain, covering an area from a line about 100 miles east of here to the western edge of the State at least.

A large acreage of cotton had been planted during the last two weeks, and it is estimated that more than half of this will have to be replanted. Station cotton and probably most of the other crops will have to be replanted. Ranchers are very happy over the rain, because the winter weeds were about exhausted and the grass had made very little growth.

The annual Feeders' Day meeting was hald Friday May 28. About 300 people composed mostly of cattlemen and stock farmers from this and adjoining counties attended. Lunch was served at noon by the Chamber of Commerce.

J. M. Jones, G. W. Barnes, and J. H. Jones of the Animal Husbandry Division of the Texas Station, were here during the week in connection with the closing out of the feeding experiments.

Maximum temperature 89°; minimum, 58°;precipitation, 2.52 inches.

LAWTON:

Weather conditions were favorable throughout the week for maturity of small grains and the growth of row crops. A beneficial rain of 1.10 inches on the 29th and 0.03 inch on the 30th brought the May total to 3.57 inches. Although the May rainfall was 1.46 inches below normal, it was quite well distributed.

Wheat and oats ripened under ideal conditions of temperature and moisture. Some harvesting was done throughout the county during the week, and the coming week will find it in full swing. Station harvest during the week included 30 acres of oats and a good many variety plots of wheat as well as various oats test plots. It is quite probable that small grain harvest on the station will be pretty well completed during the week ending June 5.

The army worms that were doing so much damage have pupated, and no further injury is anticipated in this territory.

The grasshopper infestation at present indicates a serious menace to alfalfa and row crops. Considerable damage is being done to creek bottom fields of alfalfa and cotton now, and the upland areas of grass are very heavily populated with young grasshoppers. Poisoned bait is being used extensively. Some poisoning has been done on the station, and it is likely that considerable difficulty will be experienced in protecting cotton within the near future.

A general complaint of the lack of native grass and the predominant growth of weeds in the pastures is voiced by stockmen and farmers. Cattle have done unusually well subsisting on the spring growth of weeds, but stockmen are anxiously wondering what to do as these weeds mature and dry up. The 1936 drought left native grasses in the worst condition in the history of the State.

About 25 county agents visited the station on the 26th and L. W. Osborn, extension agronomist, was a visitor on the 27th.

WOODWARD:

Temperatures the past week have been considerably lower than the previous week, 0.54 inch of rain occurred on the 24th and 0.11 inch on the 26th. Because of low temperatures, more humidity, and cloudy skies wheat has held its own. The yields will not be high. Grain men estimate the farm yield about Woodward as 7 bushels. This year's wheat yields bring out clearly what has often been previously observed. Woodward is in a transition zone between the semiarid and subhumid, 20 miles to the east wheat yields will average 15 bushels or better. Twenty miles to the west they will average 4. This rapid transition from one zone to another is always evident in the native flora. Redbud and walnut dwindle out at Woodward as do many other plants. To the east they are plentiful. To the west they are not found, and other plants of the drier plains replace them. This allows the collection and study of a wide range of plants.

Japanese honeysuckle which has been in prolific bloom over the past three weeks is now fading rapidly. Some of the jasmines are now beginning to bloom. Some of the larger flowered more showy pinks are beginning to open. Others have been a delight for a month or more. Many varieties of roses attract visitors. Coreopsis are scattered in bright yellow patches. Skullcap is a vivid blue. Transplanted from the wild it is rapidly becoming a favorite garden flower, lasting several years and volunteering freely. Hollyhocks and cornflower give the garden an old fashioned hominess.

Planting grass plants and seeds on the Forage project, repairing machinery, building grape trellis, and doing general nursery work has comprised most of the station labor during the week.

Maximum temperature, 94°; minimum, 49°; precipitation, 0.65 inch. A slow drizzling rain has been falling all day (Saturday) which at 3 p.m. amounts to 0.67 inch and it is now raining heavier than it has been. At any rate land is now in excellent shape for sorghum seeding, and some of late wheat will be helped though it is too late to help most of it except to fill properly.

PENDLETON:

Precipitation during the past three weeks has amounted to 0.45 inch. Fall sown wheats in this region are fully headed, as are most of the early spring barleys. Spring wheat is beginning to head. Rains are needed in most of the Columbia Basin area, wheat on the fallow land west of Pendleton is beginning to "burn". On the station all crops grown after fallow are still in excellent condition and should give good yields, if the normal June rainfall occurs. On land continuously cropped to small grains the effect of loss of moisture by spring runoff and lack of fall rains is very evident, as some of the plots are so badly burned that a rain within the next week will be of little use. Normally the stubble ground has as much moisture in the first six feet of soil as the fallow land in the early spring, this spring the stubble land was wet to a depth of only 2 feet, resulting in the burning on land in crop the previous year. Alfalfa and grasses on the station are very poor, much of the alfalfa being wilted at the time of cutting. The 48 alfalfa and grass plots grown in conjunction with the SCS were cut on May 28.

Visitors: Profs. D. D. Hill and Robt. Fore and a group of 28 Farm Crops students from Oregon State College, Corvallis, Ore., on May 15 and 16.

Maximum temperature, 81°; minimum, 27°.

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